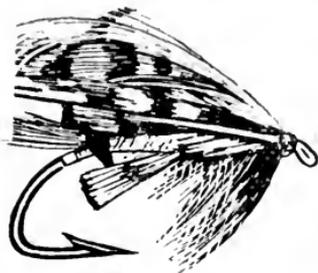


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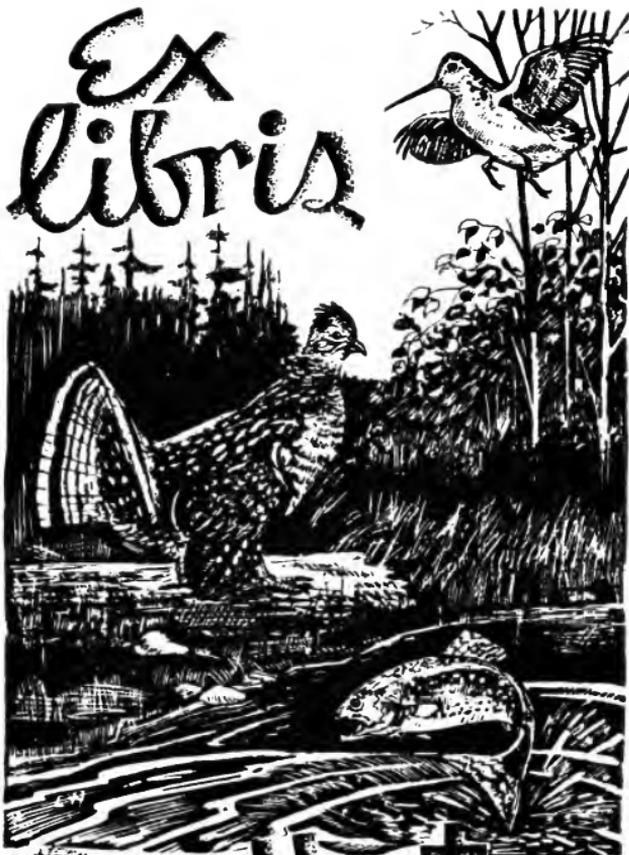
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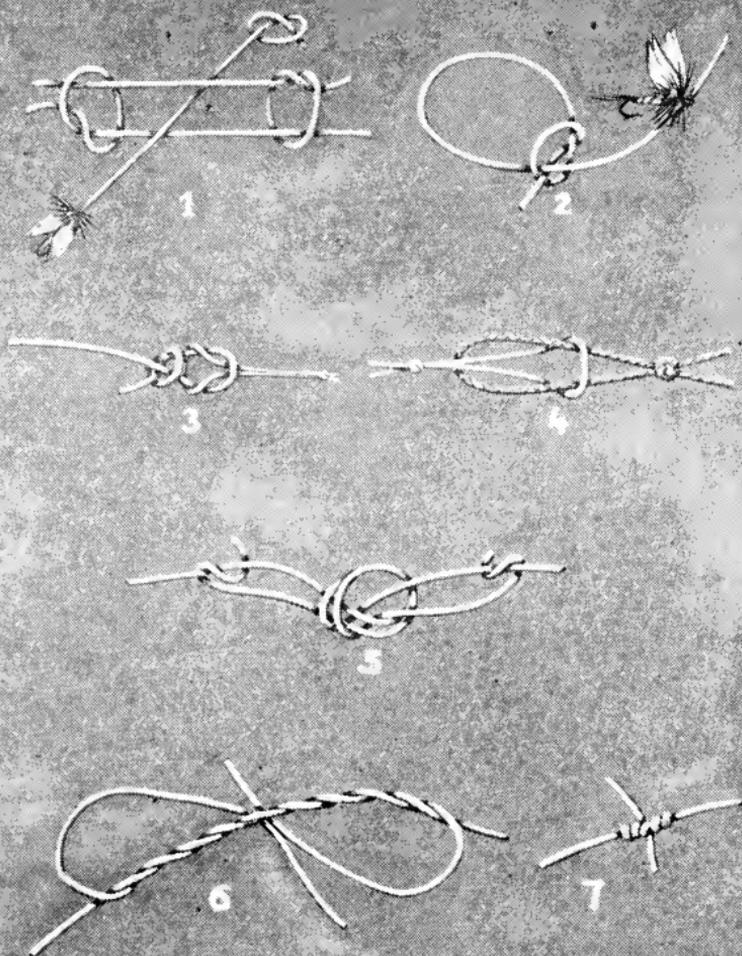
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FISHING TACKLE

INTRODUCTION

FISHING TACKLE: ITS USES AND ABUSES

THE pride of the angler in his outfit is unparalleled in the world of sport, because lures and baits exist in such infinite variety that on the wisdom of his choice the result of the day's sport will chiefly depend. Almost as much pleasure may be derived from the care and rigging up of the tackle as from the actual sport itself, and many happy hours may be spent, when fishing is "off," in refitting tackles to a nicety, gauging their strength, and generally overhauling the rod, reel and line, so that when the supreme moment arrives and the big fish is on in deadly earnest the wielder of the rod may know exactly the strain his outfit will withstand and just what latitude he can allow the monster battling for life in the depths.

Great progress has been made during recent years in the manufacture of fishing tackle—so much so that it is just as unthinkable for an angler to set out with old-fashioned gear as it is for a golfer to do himself justice on the links with an old gutta ball and clubs of the shape used when the game was in its infancy.

To set out with untested gut, perhaps old and brittle, and a line that has been left wet on the reel some weeks previously and will assuredly break like

a chain at the weakest link, is just as culpably blameworthy as for a motorist to set out with petrol tank unexamined and unfilled.

The uncertainty of the weight the fish run is a factor which adds keen zest to the sport, for there is always the possibility of a record specimen being hooked, and the tackle therefore should be capable of holding larger fish than the average run of fish usually taken.

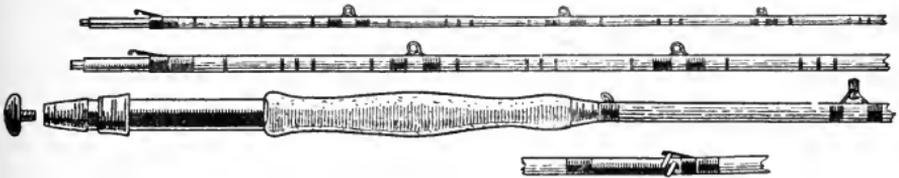
Few sporting weapons have to stand the same exposure to the elements as fishing tackle, or such constant immersion in water, and it is thus easily understood that by neglect it will speedily deteriorate. Nevertheless, owing to skilled craftsmanship in the making of the tackle, its strength and yet slender diameter is often a source of wonder to those uninitiated in the art of fishing.

CHAPTER I

RODS

THE modern rod is a scientific production and has now reached a high pitch of perfection. Year by year the craftsman adds improvements to keep pace with the march of progress.

The angler is constantly clamouring for lighter and yet more powerful casting mediums, but lightness and strength do not go hand in hand; yet, to the credit of the manufacturers be it said, difficulties are constantly being overcome, until a 9-foot fly rod can be built to-day weighing only $4\frac{1}{2}$ ounces and yet capable of throwing a 25-yard line and of landing fish



A MODERN FLY ROD.

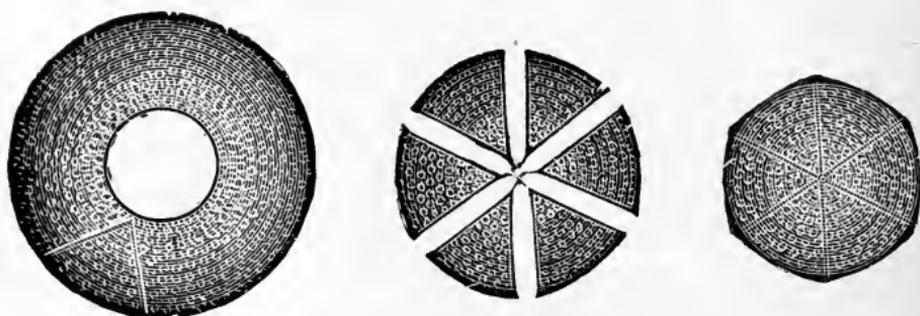
of from 3 to 5 pounds, if skilfully handled. In fact, it will be generally admitted that the present-day fly rod has no equal in any other weapon or appliance used in sport for a combination of delicacy and strength.

There is considerable scope in the material of which rods may be constructed, and each has its own individual merits.

Built or split cane is foremost in every branch of fishing. This is not to be wondered at when it is

realised that the strength of a tall bamboo-tree, which will withstand tremendous wind pressure in its natural state, is concentrated into a small fishing rod. All the hardest portions are worked up, not excluding the hard external natural enamel of the cane, which should never be pared off to make up for faulty building.

A hollow cane from $1\frac{1}{2}$ inches to $2\frac{1}{2}$ inches in diameter is split up and built together again, preferably by hand, in six triangular-shaped sections, fitting together like the sections of an orange in a hexagonal form. The sections are cemented together with the desired taper with such unerring skill that it is almost



TRANSVERSE SECTION OF CANE, SHOWING SECTIONS
CUT FOR BUILDING.

impossible to see the joins, and each piece is solid to the core when completed, the soft, pithy, internal portion of the cane being discarded in the building. Nor is this sufficient, for the canes are thoroughly dried and hardened, both over a furnace and by chemical treatment, before being finally cemented together.

Rods of this type can be made by machinery, but are not to be recommended, as the machine passes over minute imperfections, and thus there is always an element of doubt with a machine built rod. All

the best rods are therefore hand built throughout, and only workmen who make it their sole life occupation can be relied on to carry out this work skilfully.

The addition of the tapered, tempered steel centre is considered by many experts to be a great improvement to the casting power and action of the rod. This steel centre also knits the sections together, so that fractures are extremely rare. One firm has patented buttressed terminals to the steel centre on the principle of "tie rods" used on houses.

No matter for what purpose the rod is required, be it trout, salmon, bottom fishing, pike or sea fishing, or for use against the giant tuna, mahseer, tiger or sword



SECTION OF DOUBLE BUILT STEEL-CENTRED ROD.

fish, the built cane rod is an ideal weapon for strength, striking power, sharpness of recovery, durability and lightness in weight.

Next in order of superiority for the purpose of rod construction comes greenheart, a hard and closely-grained wood of great "steeliness," and whose only equal in natural growth is washaba. This latter wood is very similar to greenheart, but darker and heavier; it is very hard indeed, but nowadays is practically unobtainable. It is no uncommon thing to hear of an angler who has used a little greenheart rod for twenty years or more and landed heavy fish quite beyond the normal purpose for which the rod was made, and yet it still remains straight and true and

FISHING TACKLE



TWO-JOINT
GREENHEART
FLY ROD.



REED CANE
ROACH ROD.



WHOLE CANE
PIKE ROD.

the action unimpaired. Others may have been less fortunate in their choice. Seasoning and age play no small part, and the timber varies in respect of whether it is new or old growth and whether taken from the centre or the bark of the tree. On the straightness of the grain depends the rod's strength. The piece of greenheart used should be rent and not sawn if an ideal and straight-grained wood is to be obtained. This is a timber that will withstand any climate and last a lifetime.

Whole cane is now greatly in favour for the manufacture of rods on account of its lightness in weight and its natural quickness of recovery. The canes to be used should be thoroughly dried and hardened beforehand. Both Tonking and East India canes are largely used. Japanese yellow bamboo is not in favour.

The terminations of the joints beneath and a little beyond the ferrules should always be plugged for 3 or 4 inches in order to reinforce the cane where the chief strain falls. However, there is as a set-off to the advantage in the matter of weight—one drawback which has kept the built cane variety to the fore—and that is that whole cane is liable to become overstrained if misused, and therefore rods of this description are occasionally to be met with slightly bent on one side, and the action weakened, though all rods have an inclination in this direction, but in a lesser degree. There is no permanent cure for this malady except a patent process called "ribbing." Nothing has tended so much to bring about the present-day popularity of whole cane rods as this application of plaiting or wire lacing. It consists of flat steel or phosphor bronze plated wire (which is rustless) plaited

on the rods at a high tension, thus imparting strength, backbone and stiffening qualities. The more severe the strain or bend put on the rod the greater will be the resisting power of the ribbing, and therefore, as a preventive of overstrained joints, ribbing has no equal, while for weakened and old rods it imparts a new lease of life. This opinion has been endorsed by such eminent authorities as Mr. R. B. Marston, Mr. J. E. Pritt, the late Mr. A. Jardine, Mr. J. T. Emery and many others. The process was introduced and patented by Messrs. Foster Brothers, of Ashbourne, several years ago, and they alone undertake the work.

Roach and bottom fishers usually prefer light reed canes, which are made up in rods varying from 9 to 20 feet roach poles.

From the point of view of cost, there is considerable advantage to be derived from the use of whole cane rods, which are less expensive as a rule than greenheart or built cane.

Light cane sea rods with greenheart tops are great favourites for pier fishing, though for casting from rocks an East India cane rod with a nicely-tapered East India cane top cannot, in the writer's opinion, be improved upon. Practically all pike rods are constructed of whole cane with greenheart tops.

Among other woods put to the use of rod building, hickory stands pre-eminent. Selected growths are strong and not unduly heavy, and they very seldom break, but hickory is not so stiff when finely tapered, as greenheart, and is unsuitable for fly tops. Great care is required in its selection. Only white hickory, sun dried, dead stiff, and straight grained should be used. For any of the thicker butts, joints or very

thick tops it does excellently. Salmon rods of the balanced handle variety were at one time almost solely made of this material, but they are generally considered on the heavy side for modern requirements.

Lancewood is a light, closely-grained wood not unlike beech in appearance; it is useful for light bottom rod tops, but has not the same degree of stiffness or quickness to strike as greenheart.

Blue mahoe is a greyish rod timber of considerable utility. It has the advantage of being light and fairly stiff, but has not quite the requisite "steeliness," and therefore it is usually built up a little thicker in diameter than would be the case with other woods.

Ash, beech and hazel are still occasionally used for butts of rods, but home-grown timber does not seem to adapt itself quite so well for angling purposes as the harder South American and tropical growths. Hazel was largely employed by our forefathers, and made very useful rods. The writer once had a hazel salmon rod with the natural bark still intact, which was something of a curiosity.

The action and qualities of the perfect rod are not easily definable. Not infrequently theories are advanced concerning the point of balance—so many inches from the butt end and so on. But these rules do not work out satisfactorily in practice. The balance can only be correctly gauged when the reel and line are on the rod and part of the line is out as in fishing. Then an idea can be gained of the balance and leverage on the wrist. Therefore it is important that the reel should be of suitable weight and the line of such a thickness as will balance the outfit and not throw undue strain upon the rod in casting.

Mechanical tests have been applied from time to

time, such as that introduced by Mr. W. Baden-Powell of fixing the butt end in a vice or holder and then putting the rod through various tests by fixing weights at the end, with the rod at different angles. But this method again fails, because the true test of the rod is when in action in the hand. Rod-gauges have also met with indifferent success, and attempts have been made to formulate a definite taper for certain classes of rods.

Some very interesting experiments were carried out this year by Mr. H. G. Baker to calculate the stresses on the section at each foot of the length and to chart these out in relation to the diameters. This would show the bending curve of the rod and indicate its weakness or strength. Over twenty rods were tested in the first batch, and as a result of these experiments as far as they went, there were found so many unknown factors, especially in the case of cane which is homogeneous, that it is impossible to lay down any fixed or definite shape for a rod for any given purpose. No two lengths of wood or cane are exactly alike, and therefore the manufacture of the ideal rod largely depends on the skill of the builder, and machine built and standardised rods can therefore never be a success.

It is only safe to generalise, but in the choice of the ideal rod the following attributes should be sought: It should have ample power. A weak-backed one, or, as a wag aptly put it, "a rod like a yard of pump water," is useless for all practical purposes. A fishing rod should combine strength, lightness and casting power. The weight should be gauged by the lightness or feel of the rod in the hand rather than in the scale. It must be stiff enough

to cast a long distance with accuracy and precision, and yet sufficiently pliant to make a short cast with delicacy. The rod should be quick to respond to each desired movement as though it were part of the fisherman himself.

CHAPTER II

FERRULES AND FITTINGS

HAVING chosen a rod of suitable timber, the next consideration is the ferruling. Fishing rods, in the main, are in either two or three parts, connected by ferrules, interlocking, and on the way in which the ferrules are fitted is going to depend the strength of the rod, for nine times out of ten when a rod breaks it is fractured at the termination of one of the ferrules. This is the reason why all rods of the better type have the ends of the ferrules serrated or toothed, in order to distribute the strain which falls on the timber immediately after the straight length of tubing, and on no account should the rod timber be undercut or reduced in diameter *to take the ferrule* sufficiently to cause weakness, but the ferrule should be made to fit the wood.

The short tongue or projection called the tener has its object in distributing the internal strain or end play of the counter-ferrule and preventing a swelled or buckled joint. In the case of built cane rods this tener is often let into a solid brass socket inside the ferrule, which preserves the sections inside the ferrule from wet or damp, for if once wet gets inside the ferrule the moisture is rapidly absorbed by the cane and travels down the fibre below the ferrule, and in the case of a built cane rod causes the sections to become uncemented. Should your rod set up a faint creak at each movement, you may safely diagnose the

trouble and attribute it to the above-mentioned cause. It should be remedied without delay, or it will spread rapidly, to the detriment of the rod.

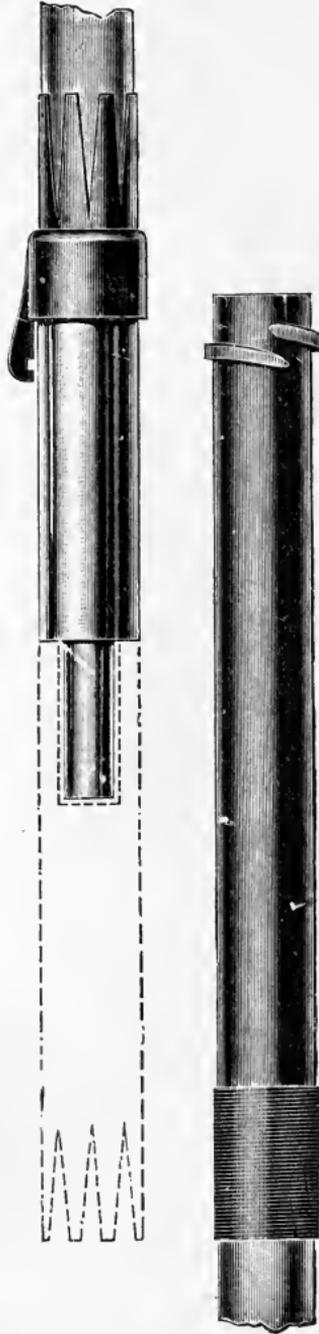
The plainest type of joint is the suction pattern, usually fitted with small "hitches" in order that the joints can be tied together and so prevent throwing out. But the waterproof cap suction joint is now very popular, for besides keeping the rain out of the joints the overlapping cap increases the suction grip. An accurately fitting joint of this type is almost as useful as the locking pattern.

The types of lock joints introduced have been many and various, but most of them have had a short life. The outstanding pattern is the "Universal" or "Bayonet" and "Standard" fitting, consisting of a small projection on the male ferrule, which engages with a slot in the top of the female ferrule, either by a spiral turn or by a straight thrust and then a turning movement.

Perhaps the most popular joint is the "Spiral" or "Perfect" joint, the principle of which is a projecting tongue brazed on the counter-ferrule, which engages with an external spiral worm or thread on the female ferrule. Anglers should be warned against patterns of lock joints having internal screw threads or locking attachments that are not easily accessible and therefore cannot be cleaned or kept free from corrosion.

No matter what the ferrule or for what type of fishing the rod will be used, the angler should make sure that the joints are secure. The writer has very vivid recollection of his first boyhood fishing experience when he borrowed an old-fashioned four-jointed rod in order to try his hand on a small perch pond.

FISHING TACKLE



SPIRAL LOCK JOINT, SHOWING SERRATED END.

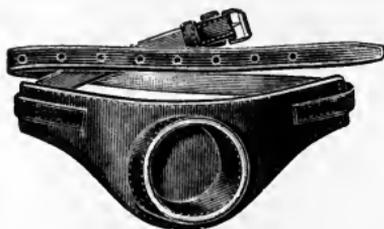
After an afternoon's fishing he came away with the butt joint only; the remaining joints were sticking point downwards in the middle of the pond. The last bit of the joint next the butt could be seen standing out clear of the water, alas!—out of reach though tantalisingly near.

The reel fittings on most rods are satisfactory and adapted to their requirements. But for light-bait casting and various branches of spinning, and on some bottom rods, movable fittings on a parallel grip are of very great advantage, as the reel can be moved to a required position above or below the hand and can be adjusted to suit the balance of the rod on the wrist. The strength of the reel fitting must be governed by the weight of the reel it is required to carry. When a heavy 5 or 6 inch reel is used, it is no use relying on four small screws to hold the reel in position. Screw-grip reel fittings, having the reel band moving on a screw thread, are well adapted for sea fishing from a boat, as the reel band cannot work loose and the danger of losing the reel at a critical moment is averted.

Most rods are fitted with cork handles, as cork has been found to give the best grip when dry or wet, and does not raise blisters on the hands in a long day's fishing. The cork may consist of sheet cork, cemented on the handle, which is the commonest type, and is quite satisfactory; unless the rod is put away in a wet cloth cover, when the cork sometimes peels off. Or, in the case of sea rods, the spray sometimes gets beneath the cork after long exposure. For that reason a cord-bound handle is most durable for sea fishing. Solid cork handles are fitted to lightweight rods and to fly rods, in which it is desirable that the

action should continue down the handle to the hand. Cork composition is too porous and is not to be recommended.

Butt ends are usually provided with a detachable rubber or pneumatic button, which comes in contact with the body and protects the groin from undue pressure. In the case of those who find sport among the giant fish, and where the weight of rod and tackle is heavy and the strain in playing a monster is exceptional, it is wise to wear a leather butt rest which will



ROD BUTT REST.

hang down from the waist, as constant pressure on a soft part of the body may lead to serious trouble.

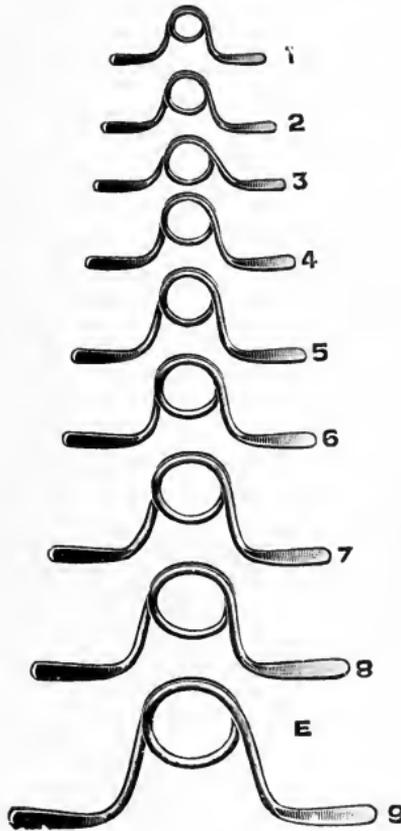
RINGS.

Rod rings play no small part in the life of a line, and suitable rings will add yards to the length of the cast. The old-fashioned "lie-down" pattern rings are now quite obsolete. The snake pattern are still in general use, but undoubtedly the bridge pattern are the best and do not impede the rapid shooting of the line through the rings.

On the butt and tip rings, however, falls the chief friction—so much so that even phosphor bronze, steel wire, porcelain and bone can be cut into grooves.

The agate or cornelian centres have in recent years

come into universal use. These rings should be so mounted and encased that the line will not loop itself round them but always slip free. It is astonishing how much extra distance in casting can be obtained with rings forming a suitable combination. The

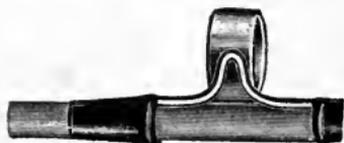


BRIDGE RINGS.

improved pattern tip ring with side protective arms is unsurpassed for spinning and bottom fishing rods, as the line cannot get hitched round it. Porcelain rings are widely used, chiefly because they are less expensive than agate, and a good quality porcelain centre does not become grooved. The ordinary wire-mounted

types are rather inclined to suffer damage and to get broken, but the metal-encased variety are quite serviceable. Pike rods, sea rods and all types of spinning rods should be fitted with anti-friction rings of agate or porcelain.

But it is quite a mistake to suppose that rings of this type can be fitted throughout light fly or bottom fishing rods without spoiling the action and balance and completely overloading the rod. Very frequently



ENCASED AGATE BUTT RING.



PROTECTED PORCELAIN TIP RING.

the tip rings on fly rods are much too large and may easily spoil the balance. To give a rough example, a tip ring weighing the smallest fraction of an ounce will create a leverage on the wrist at the rod handle of several times its own weight, and so on down the rod in proportion. The action of the average trout

fly rod is so finely adjusted that even sandpapering off of the varnish and polish may produce a perceptible difference.

CARE OF ROD.

A few suggestions on the care of a rod may now be appropriate. Keep the rod in a cloth-partitioned case, but never put it away in the damp rod bag which has been thrown on the grass or exposed to the dew or rain. A small tape loop is generally to be found on the end of the bag. The rod should be hung up in a dry room. At the end of each season a very thin coat of waterproof, non-resinous rod varnish should be applied, which any reputable rod maker will supply for a shilling or so. This will preserve the silk wrapping, protect the timber and keep the wet out.

Stoppers or plugs should always be kept in the ferrules when the rod is not in use, to protect the internal portion of the ferrules from corrosion and dust and to keep the wood in the socket free from swelling when exposed to damp or wet.

CHAPTER III

ROD-MAKING

THOSE who have plenty of spare time, coupled with skill in woodwork and metal, will not find it difficult to construct a rod to their own liking. It is better to work to a pattern, say, of an old favourite rod, but it may not be quite so easy to match the material. Canes, greenheart or other rod timbers can be obtained from any firm specialising in rod-making accessories.

The tools, etc., required, are a small smoothing plane, a range of flat 1-inch files, including "dead smooth," emery paper and glass paper, a vice with a wedge of wood slotted for taking the diameter of the joints, a couple of tapered mandrils, brass wire for rivets, an Archimedean drill, French polish and non-resinous varnish.

The success of the whole cane rod will depend solely upon the choice of the taper and strength of the canes, and these will not require to be touched except to round off the knots with a file and to plug the hollow ends with hard wood. Thoroughly dry and straighten the canes over a hot fire. They will then be ready for reinforcing by plugging the hollow ends with hard wood, applying silk wrappings over the knots, French polishing and dressing the cane.

If greenheart is used, it can be bought in the square, and should be quite true and straight grained. A "cast" to one side in the wood can never be satisfactorily set right. The wood should be laid on a flat

bench and planed down with a small smoothing plane, working equally all round the wood. The plane will have to be very sharp and accurately set, and it is found an advantage if the blade is slightly rounded. A simple method is to fit up a grooved trough in a board to take the joint and to fit the board in a vice. The joints should be neatly rounded and quite true, with no flat places, and it is better as a precaution to leave the wood just a shade thicker in diameter than will be required, to allow for finishing. For it is always possible to take a little more off, but impossible to add to the thickness if it is found that the action is not stiff enough when the rod is roughly put together with the ferrules on.

The next consideration is the handle of beech, pine or other light wood, which should be turned on a lathe before cutting off from the piece to the requisite length, and the piece then drilled out to take the butt joint (see Fig. I.). An ordinary brace and bit will not be suitable, but a long twist drill or auger that will not twist the wood but bore a straight, clean hole should be used. It is important that the hole should be straight and true, to ensure the handle fitting truly on the butt. When the hole is drilled, fix a dummy piece of wood firmly in the handle and fit the end of it in a hollow-headed lathe, then proceed to turn up the handle to the shape desired. Take out the dummy wood and glue the butt joint firmly into the handle, letting in to within an inch of the end. When a lathe is not available, a butt and shaped handle can be made out of one piece, only the wood when bought must be 1 inch in diameter and the handle and butt shaped right down with a small plane, as shown in Fig. II.

A solid cork handle is another alternative. The butt piece can be shaped as first mentioned and then some picked cylindrical corks or large bottle corks of $1\frac{1}{4}$ inches or $1\frac{3}{8}$ inches diameter bored out in the centre and slipped on to the butt and glued up as closely as possible.

With the aid of a rough file and glass paper the handle can then be shaped. To obtain a neat, velvety finish, cut a sheet of size .1. fine glass paper into a 1-inch strip the full length of the paper, then work the paper transversely across the handle.

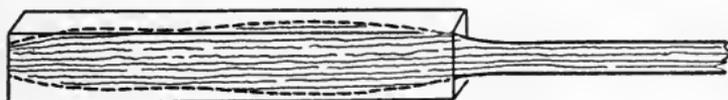
Winch fittings and ferruling can be worked up from brass tubing of the requisite diameter. To make the ferrules wider at one end than the other, place on a mandril or tapered steel bar and beat all round it with a hammer, giving gentle but quickly repeated taps evenly distributed. Ferrule ends should always be a little wider to prevent the necessity for cutting and filing the wood to take the ferrule (or if the end of the ferrule is turned in a lathe or filed, very thin teeth can be cut with an old pair of fine-pointed scissors, as shown on Fig. VI., and the strain will be distributed with little fear of a fracture at the end of the ferrule). This undercutting will invariably cause a fracture. Most rods are fitted with a dowel or tener at the termination of the counter or male ferrule (see Fig. III.), and a corresponding socket should be drilled very accurately in the centre of the wood joint. Method of drilling the hole for the tener is illustrated in Fig. IV. The teners can be covered with brass tubing, as a plain wood tener, if allowed to get wet, sometimes swells, causing the joint to stick fast. For small teners on trout or bottom rods a solid brass tener cut from brass wire may be driven in when

FIG. I.



ROD HANDLE TURNED AND DRILLED & GREENHEART BUTT
READY FOR INSERTION.

FIG. II.



— OR TURNED OUT OF A SOLID PIECE IN ONE LENGTH

FIG. III.

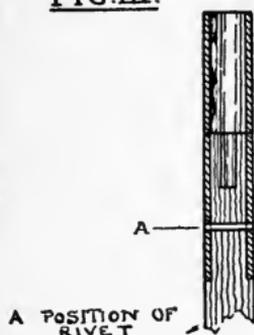


FIG. IV.



BORING HOLE FOR TENER



SECTION . END OF JOINT
CENTRED.

FIG. V.



FINISHING OFF WIRE
WRAPPING ON A TIP-RING .

FIG. VI.



SERRATED OR TOOTHED
FERRULE .

MAXWELL.

the ferrules have been shaped, emery papered and polished; a bronzing solution may be applied and a rivet driven through a hole made with an Archimedean drill. The rivet should be as far from the ends of the ferrule as possible to avoid any weakness where the ferrule ends and the wood begins.

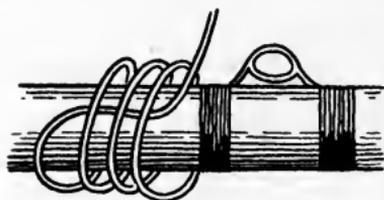


HANDLE FITTINGS.

The ferrules should be warmed before they are fixed. They will then contract slightly and obtain a firm grip on the wood. A very little thin shellac polish or fish glue will prevent them from loosening. The butt end may be either rounded off or a tapered ferrule fitted and a wood button or knob fastened in.

Two tapered reel bands or ferrules that will slide on the butt handle will hold the reel. The lowest ferrule should be shaped to prevent the seat of the reel from slipping round the band, and this ferrule should be firmly riveted from both sides. After making sure that the reel fittings are correct, the actual fixing should be left until the rod is completed and polished.

The rod should now be thoroughly sandpapered until it is perfectly smooth and glossy, and then the snake pattern, bridge or porcelain rings may be spaced on at slightly diminishing distances apart and in descending order of size. Having procured some



KNOTTING OFF SILK BINDING.

strong silk, the wrappings can be applied without difficulty after a little practice. The joint should be placed under the left arm and the silk held in the right hand. Turn the joint round anti-clockwise with the left hand. Contrary to the ideas of the beginner, the right hand controlling the silk should be held twelve or fifteen inches away from the wrapping that is being applied. To finish off, bind the last four strands over the finger end, slip the end beneath these strands, next withdraw the finger as soon as the first of the four strands is firmly held, and then proceed to wind down the four strands. The illustration shows this useful way of knotting off wrapping, which can be applied to all sorts of binding for hooks and tackles.

Tip rings are bound on in a similar way, only the first wrapping is done with wire and finished off by carrying the wire beneath one leg of the tip ring and then pulling it up closely to the wire wrapping (see Fig. V. on Plate).

As soon as the wrappings are applied, coat over with a good spirit varnish or French polish, and then grip with a piece of clean white rag as lightly as possible between the thumb and finger and turn the joint round as rapidly as possible until the silk is smooth and shiny. Repeat several times according to the thickness of silk and polish.

Polish the wood with French polish on a pad of white rag, having first of all put a little drop of oil on it. Several polishes should be given at intervals of 24 hours, as the wood absorbs polish. Proceed to polish each time until all tackiness disappears, and as a final coat take an entirely fresh piece of rag and repolish with practically all methylated spirit, to kill any grease on the surface. A highly-finished surface should result. The polishing should be done in a warm room. If allowed to get "chilled" it will turn white.

French polish can be made by dissolving 8 ounces of shellac in a pint of methylated spirit. Put the bottle by the fireside and shake it at intervals, and it will be ready to use in two or three days' time. The bottle should have a loosely-fitting stopper.

The handle fittings may now be finally attached and the rod given several good coats of rod varnish, which is practically non-resinous, waterproof, and will not crack. Thin coats only should be applied at two days' intervals, as good varnish takes a long time to dry.

CHAPTER IV

FLIES

IN the art of fly fishing we have the true contemplative man's recreation, and to be an expert Walton's saying is true: "Angling is something like poetry—men are born so." In a work of this nature space forbids dealing fully with the natural fly, its habits and its imitation, but the angler's observation will assist him in choosing the best flies for his particular district. But the soundest of advice is "to fish fine" and "to keep out of sight." The fish face up stream and have a wide range of vision on either bank. Cast the fly from a low point on the bank side, throwing up stream, and wade if possible.

The craft of fly-tying has made great advances, and flies are almost always tied on small eyed hooks of bent sneck or Limerick bend. Pennell's or Hall's eyed hooks make very neat trout flies, and the double-hooked variety are perhaps the latest word in the fly-tyer's art.

The first question that usually arises is, "How is the fly to be tied on to the gut?" The simplest method is to thread the gut through the eye and to slide the fly down it a short distance, then make a slip knot. Drop the noose round the head of the fly, pushing the fly tail first into the loop or noose, so that it finally falls on the soft dressing of the head, forming a cushion; then draw the knot gently but firmly, and cut the gut end off quite short. Gut



IRON BLUE DUN.



RED SPIDER.



WELSHMAN'S BUTTON.



ZULU.



RED SPINNER.



RED PALMER.



WATERY SPINNER.



LITTLE CHAP.



ALDER.



ORANGE BUMBLE.



BLACK MIDGE.



DOUBLE HOOKED
RED QUILL.

EYED FLIES FOR TROUT AND GRAYLING

should always be soaked for half an hour in lukewarm water before knotting or tying. (See Frontispiece.)

Flies offer a wide variety of choice in tint and colour of dressing, and the angler must be advised as to the particular flies which are on the water and in season. There are also several styles of dressing—for instance, dry fly, wet fly, spread winged, detached bodies, reindeer bodied and nature series with gauze wings. But for the tyro the ordinary wet or dry fly dressing is best to begin with.

Salmon flies are not tied in imitation of nature, as, strangely enough, no such fly exists, but evidently the salmon is attracted by the appetising appearance of the artificial fly and rises to it greedily.

Most species of fish can be lured with a fly. Grayling have a particular fancy for red and silver colouring. Perch will take a large and gaily coloured fly—in fact, they prefer a large size 2-hook fly to a dainty trout fly. Chub, like perch, feed greedily on large flies, and they provide good sport to the bottom fisher and fly fisher. Favourite chub flies are the Soldier Palmer, Red Tag, and the large Coachman or Alder. The favourite chub fly of the late Mr. Francis Francis was silver bodied with a furnace hackle and washleather body and dark turkey wing with sprigs of peacock herl.

Fly fishing for dace is finer fishing and but little inferior to trout fishing. A fine line and some good trout dry flies tied on the cast with two droppers will yield good sport. The Apple Green Dun, General Black, Golden Earwig and Black Palmer with silver-ribbed body are all first-class killers.

Among sea fish, few species will decline a suitable

fly when feeding, but fly fishing for bass gives the best sport. Good sport can be obtained from rocks by using a grilse rod and a large fly with some red and green on it. Rame Head is a notable spot for this kind of fishing. When mackerel can be seen breaking the surface, they will take a fly cast from a boat. Two or three flies may be used on the cast in the form of droppers. The Alexandra and Dark Coachman are good ones.

Fly fishing is an art that can be practised in almost every branch of angling, and a few lessons by one proficient therein will soon enable a good length line



THE BEETLE WHICH IS SO SUCCESSFULLY IMITATED
IN THE COCH-Y-BONDHU.

to be cast. It is not so much a question of "waiting for a bite" to the fly caster, for he can lay aside the more passive measure and seek the wily fish in likely holes and shallows 20 and 30 yards distant without revealing his presence.

Fly lures have proved most deadly during late years, so much so that such well-known patterns as the Nailer have been barred from certain reservoirs, lakes and rivers. Lures are fished on the sink-and-draw plan, being cast up stream and brought in with a series of short jerks. A great many patterns of lures are no doubt taken for small minnows or more imaginary appetising morsels by the fish. At all events, the larger-sized hooks are disregarded, and

the more gaily decorated artificial fly is greedily snapped up by big fish.

An interesting and unique fly was being wielded recently by a fellow angler and with considerable success. It consisted of an imitation beetle with two red glass eyes, and it certainly was conceivable that the red glint of the eye would prove an irresistible attraction to the fish. A black hackled variety was used by Mr. Bruce Ismay on the Irish lakes with success. Imitation grubs, caterpillars, nymphs and aquatic beetles may all be used, especially when trout are not rising on the surface.

TROUT FLIES, FOR WET AND DRY FLY FISHING.

Flies for the various months may be grouped in the following order :

FEBRUARY AND MARCH.

Red Fly or February Red.
 March Brown.
 Greenwell's Glory.
 Light Bumble.
 Gold-Ribbed Hare's Ear.
 Pale Olive.
 Coch-y-bondhu.
 Blue Dun.
 Cockwinged Dun.

APRIL.

Needle Fly.
 Blue Upright.
 Sand Fly.
 Jenny Spinner.
 Cowdung.
 Grannom.
 Yellow Dun of April.
 Red Spinner.

MAY.

Coachman.
 Olive Dun.
 Willow Fly.
 Golden Earwig.
 Yellow Dun of May.
 Black Gnat.
 Golden Dun Midge.
 Iron Blue.

JUNE.

Turkey Brown.
 Alder.
 Black Midge.
 Red Palmer.
 Little Dark Spinner.
 Pale Evening Dun.
 Dark Mackerel.
 Midge.
 Little Chap.

JULY.

Ginger Quill.
 Blue Quill.
 Yellow Sally.
 July Dun.
 Red Ant.
 Dotterell.
 Little Sky Blue.
 Red Spider.
 Welshman's Button.
 Orange Bumble.

AUGUST.

Whistler Fly.
 Golden Dun.
 Black Spinner.
 Zulu.
 Wickham's Fancy.
 Orange Dun.
 August Dun.
 Sedge.
 Black Spider.

SEPTEMBER.

Whirling Blue Dun.
 Blue Bottle.
 Dark Coachman.
 Little Pale Blue.
 Pale Evening White.
 Red Quill.
 Cinnamon Fly.

OCTOBER.

Grey Palmer.
 October Dun.
 Hare's Ear.
 Esterhazy Dun.
 Coch-y-bondhu.
 Winter Dun.
 Black Palmer.

FLIES FOR GRAYLING.

The well-known authority on grayling fishing, Mr. T. E. Pritt, recommends the following flies, as used by leading experts of this art, in his "Book of the Grayling":

MR. PRITT'S CAST: Bradshaw's Fancy, Dark Needle, Fog Black.

MR. BRADSHAW'S CAST: Bradshaw's Fancy, Golden Crow, Bradshaw's Adopted.

MR. DAVID FOSTER'S CAST: Silver or Winter Dun, Steel Blue Bumble, Cockwinged Dun.

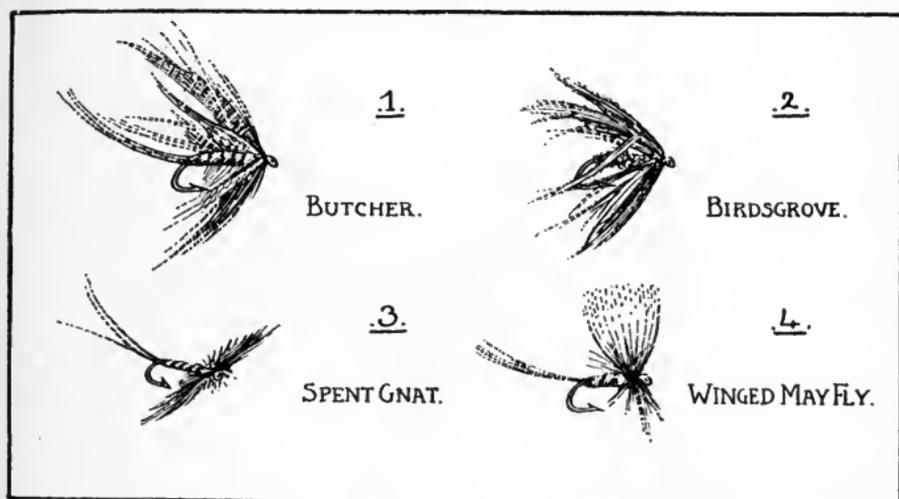
MR. LUPTON'S CAST: Bradshaw's Fancy, Willow Fly, Dark October Dun.

MR. WALBRAN'S CAST: Red Tag, Sea Swallow, Waterhen.

Other patterns to be recommended are: Silver Dun, Little Chap, The Witch, Queen, Orange Tag, Silver Ray, Fairy, etc.

CHAPTER V
THE MAY FLY

WHEN the news goes round that the May fly is up there is joy and excitement in the ranks of anglers, and preparations are rapidly made for an excursion to the water's side. The Drake season is exhilarating sport, recalling happy days of sunshine and fresh spring breezes. When there is a glut of May flies on,



HACKLED AND WINGED MAY FLIES.

the water may seethe with rising fish, and is a sight not to be missed.

The May fly comes on the water first in Ireland, and, contrary to its name, it is really a June fly, and appears on the lower reaches of the river which are warmer than nearer the source (the latter being fed by cold mountain springs), and on slow-running water such

as mill-dams before the more rapid part of the water. Very large fish may be accounted for on an artificial May fly. In fact, the largest trout ever taken have probably been caught during this season. The hackle patterns kill the best, the "Butcher" being, perhaps, the best known of this variety, having a reputation second to none.

The Drake lives a brief life of three or four days, and is caught by fish while laying her eggs on the water. The female Green Drake changes to a Grey Drake, and the male to a Black Drake. The Hackled or Buzz variety is intended to imitate a half-drowned and struggling fly in the water, and this last type is considered to be by far the best killer.

Perhaps for the amateur, Ronald's dressings from his "Fly Fishers' Entomology" could not be improved upon :

Green Drake.—Middle part of pale straw-coloured floss silk, ribbed with silver twist. Extremities of brown peacock herl tied with light brown silk thread. Tail, three rabbit's whiskers. Wings and legs, made Buzz from a mottled feather of the Mallard, stained olive.

Grey Drake.—Middle part of white floss silk ribbed over neatly with silver twist. Extremities of brown peacock herl tied with brown silk thread. Tail, three rabbit's whiskers. Wings and legs, made Buzz from a mottled feather of the Mallard and stained a faint purple.

The more modern patterns, such as the well-known Butcher, include a red-tinted body and olive-coloured wings or a yellow-olive body.

CHAPTER VI

SALMON AND SEA TROUT FLIES

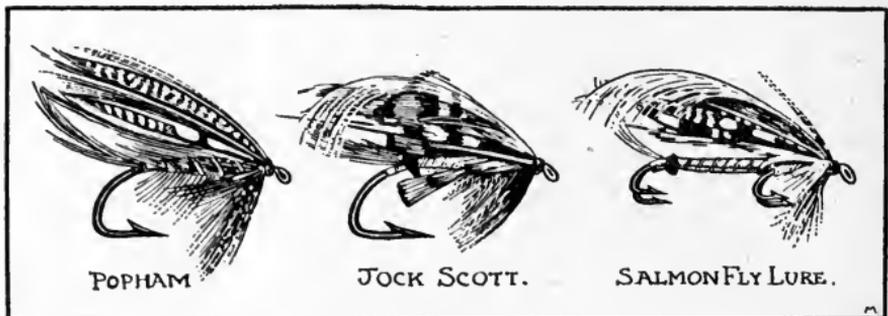
THE colour and dressing of salmon flies have, during the last twenty years, undergone a mysterious change. Dull colours were at one time solely used, and anything in the nature of a brightly-coloured specimen was to be deprecated—so much so that Stoddart says for the dressing of a certain fly he permits as a luxury a rib of *silver tinsel*, *provided it is tarnished*, and warns anglers against the display of gaudy Irish patterns in Scottish waters.

Fine fish were undoubtedly caught on these less showy flies, yet to-day all the best killing patterns are brightly coloured; in fact, as many gaudy colours as possible are crowded on some of the patterns, even going so far as the new prismatic-coloured flies invented by Mr. W. Baden-Powell. Indeed, nowadays, contrary to Stoddart's instructions, the Irish flies are of duller colour than the Scottish. The Durham Ranger, Wilkinson and Blue Doctor are prime favourites on the Tweed, and no colour is considered too gay or tinsel too bright. The only conclusion to come to is that the tastes of fish differ and vary from time to time, and this opinion is endorsed by Francis Francis and other eminent authorities.

The dressing of the salmon fly differs from other varieties in several ways. First of all, the hook is generally a Limerick of the eyed variety in preference to the sneck bent hook. The flexible gut eyes are not recommended, as they are liable to weaken with much

use, and their life is limited, as gut will not keep indefinitely without becoming brittle. But if metal eyed hooks are employed and the flies dried after use before being placed in the case and protected from moths, the usefulness of the flies will extend over many seasons. The size of fly may range from 5/0 to 2. Double-hooked salmon flies and salmon fly lures may also be used with success.

The best known killing patterns are: Jock Scott, Dusty Miller, Durham Ranger, Blue, Silver and Black



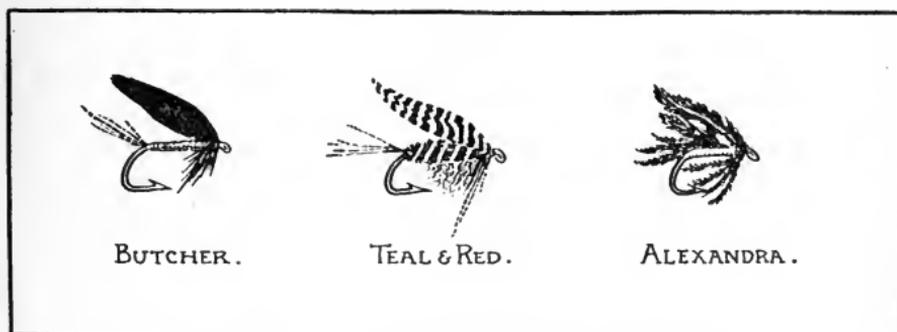
SALMON FLIES.

Doctor, Thunder and Lightning, Parson, Wilkinson, Childers, Butcher, Wasp, Dunkeld, Donkey, Popham, Spey Dog, Claret and Mallard.

The sea trout is one of the best sporting fish we have in the British Isles, but its name is rather ambiguous, as it is used to denote several species of fish in different localities. The sea trout is distinct from the salmon or grilse, but is considered to be of the same species as the white trout, bull trout, sewin and salmon trout. Bull trout are very abundant, and they alone of the sea trout are poor sporting fish.

The flies used for the sea trout are, like the salmon flies, unlike any in nature. In some parts of the country anglers "swear by" light patterns, in others

by dark ones, and local anglers insist on certain patterns; but experience shows that local opinion is not always correct, and flies quite different in shade and colour from those usually used will often prove better sport bringers. The flies themselves may be divided into two distinct varieties: the first, miniature salmon flies dressed on hooks varying from size 4 to 11 (new scale) with bright dressing, tinsel body, and very often includes Blue Jay and Golden Pheasant. The second class is a large trout of such well-



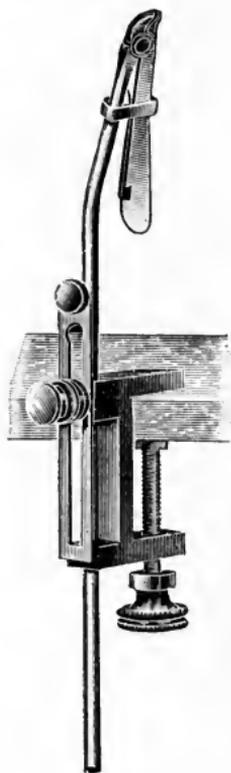
SEA TROUT FLIES.

known patterns as March Brown, Zulu, Coch-y-bondu, Coachman, Olive Dun, Wickham's Fancy, Butcher, Teal and Red, Alexandra, etc. The Red Eyed Beetle dressed with black hackle has proved an excellent sport bringer on Irish and Scotch lakes. In fact, sea trout, when on the feed, are not so fastidious as their lesser brethren.

Those who wish to tie their own lake flies will require a selection of eyed Limerick hooks and materials such as Mallard and Teal, silver tinsel, Golden Pheasant, Blue Jay, Red Cock's Hackle, with orange and red floss for tails and various coloured mohair for bodies. The task should then present but little difficulty.

CHAPTER VII
FLY-TYING

THE amateur fly-tyer is generally an enthusiast, for one of the most fertile pleasures of the fisherman is undoubtedly that of attracting fish with lures fashioned



HAWKLEY FLY VICE.

by his own hand, and he experiences an extra spice of enjoyment when his skill is crowned with success. It is an art that will come naturally with practice to anyone with fine fingers and good eyesight. A fly-tyer's

vice is a necessity, with jaws of the sleeve ring type such as the "Hawksley." The fly can then be firmly gripped in an instant without the necessity of screwing up the jaws. A vice that will screw on to a table leaf is usually employed.

A small box should be kept containing fly tweezers, fly scissors with fine-pointed ends, fly-makers' wax, a pricker or needle-like tool, forceps, a bottle of celluloid varnish and one of shellac varnish with a small camelhair brush fixed in the cork. In a separate compartment a range of hooks of varying sizes should be kept clearly labelled. Fly-makers' wax can



FLY-TYING SCISSORS.

be made of resin and soft paraffin wax mixed in equal proportion dissolved on a stove. If the wax is too soft and sticky, add more resin; if too hard, more wax. To keep a supply for any length of time it should be placed in small knobs in a jar of water.

The selection of suitable materials contributes largely to success, and as a wide range of different feathers, silks and dressings will be required, it is important that they should be kept carefully, tidily and listed up in packets, each one labelled and containing moth balls.

Natural coloured feathers are better than dyed ones, as there is always a risk of dyes coming out and changing colour when either oiled or in the water.

The obtaining of a good collection of materials is a work of time, as the items used are varied and not always available at the same time of the year.

Poultry provide good feathers and hackles, the best feathers being obtained from small birds and also from common small birds of the hedgerow. When neck and scalp feathers are required, the skin should be peeled off and the skin and feathers well washed in carbolic soap before being dried.

Materials for bodies include quill, which is fibre taken from the peacock, condor or turkey feathers. Raffia, mohair, and silk are largely used. Tinsel can be employed to advantage, and may be either flat, braided or wire, in gold or silver. Good tinsel, practically untarnishable, may be bought, and it is best obtained through a tackle dealer or fly maker.

Ordinary silk is of no use for fly tying. It should be extremely fine and strong and (as many dyes have a deleterious effect) undyed. Yellow and orange silks have been found the strongest.

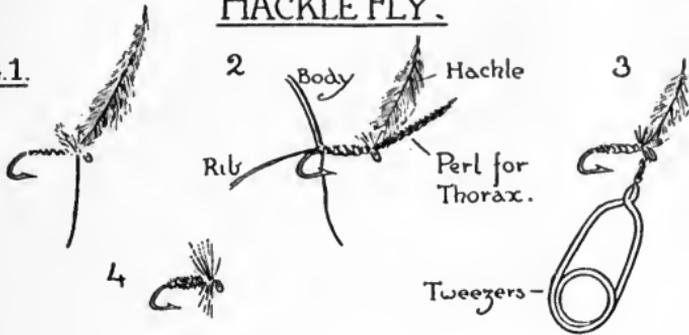
MAKING THE FLY.

As there are at least a dozen entirely different types of artificial flies, it is only proposed to give the general principles of applying the dressing.

A hackled fly is the simplest to dress. (1) Trim the hackle at one end, keeping it distant from the eye of the fly to allow sufficient room to tie it on and wrap it off. (2) Tie the point of the hackle to the hook (which is held in the vice) by means of a half-hitch and three turns of silk well waxed (see Fig. 1). It is very important that this be firmly done and the silk not allowed to loosen. (3) Tie on the body herl or tinsel with a few turns of silk to keep it in position,

HACKLE FLY.

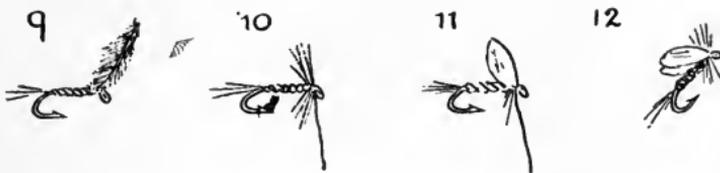
FIG. 1.



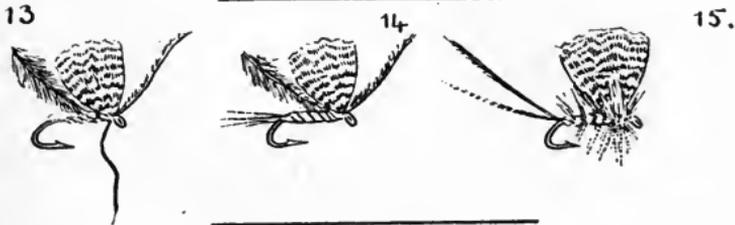
WINGED DRY FLY.



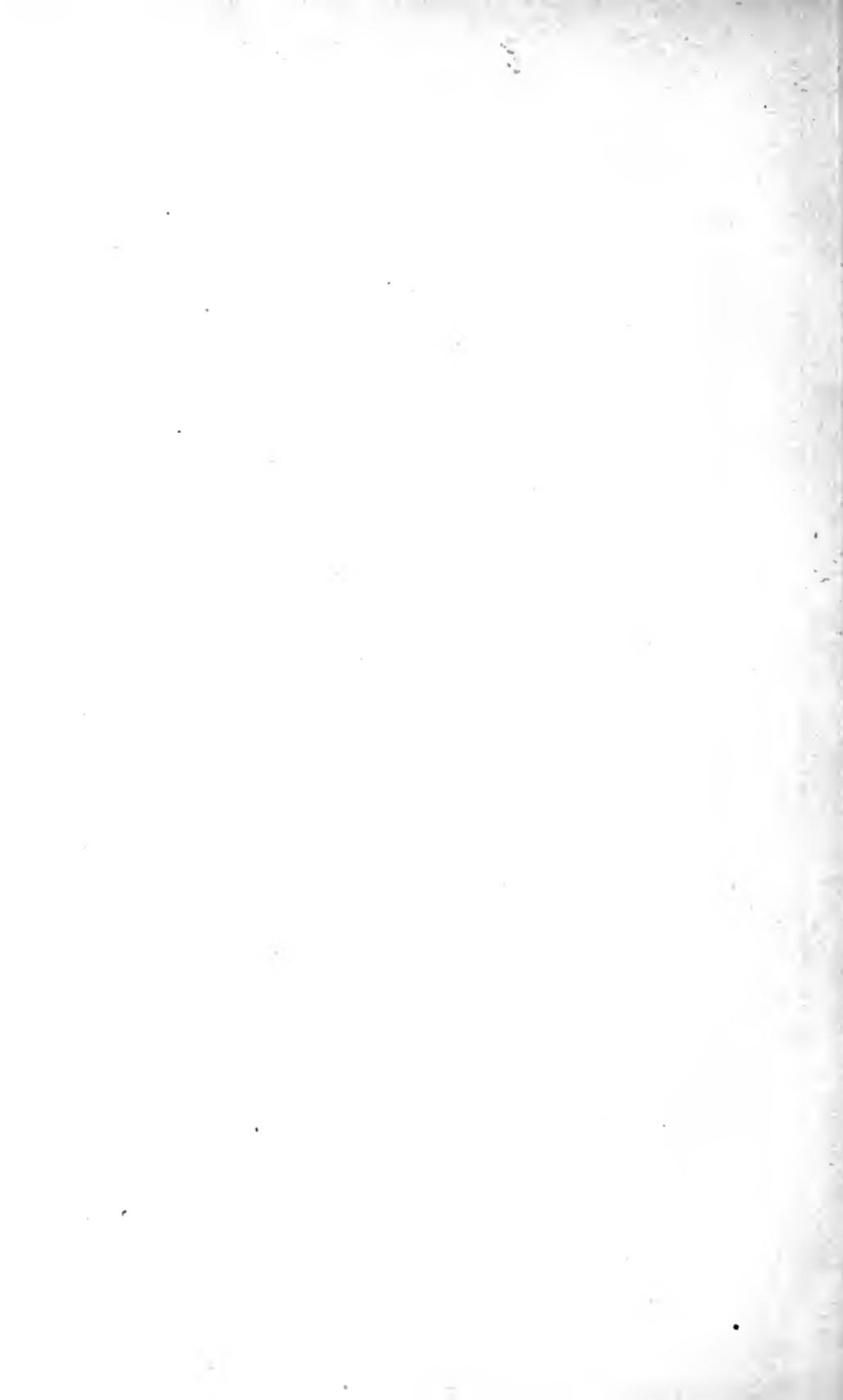
WINGED WET FLY.



WINGED MAY FLY.



PARWELL.



and run the silk from head to tail and back again to the head. (4) Wrap on the body material, hold in the fly tweezers as indicated in Figs. 2 and 3. (5) Wrap on the hackle and tie off with two or three turns and two half-hitches. Trim off all ends and apply celluloid varnish to the head. (6) To wrap a Palmer, start one hackle at the tail and the other at the head. The fibres should be short. The body is of peacock herl ribbed with tinsel. Wrap on the peacock and then the tinsel and tie off at the end.

To tie a *split-winged* dry fly, select a suitable feather that does not split readily, such as a woodcock, starling or jay (Fig. 5). Cut a piece twice the width of the required wings, and work carefully into a rectangular shape with the forefinger. Double it over along the fibres and not against them. Tie on to the head of the fly (Fig. 6); after that the hackle and body should be dressed, as in a hackle fly (Figs. 7 and 8). Throw a half-hitch over the end of the wings, draw the silk tight, wrap off three or four times and knot off. Trim the ends of the wings and varnish.

A *down-winged* wet fly is rather differently tied. The wings should be rather large, as they lose length when tied back. Tie the hackle and body as before (Figs. 9 and 10). Cut a suitable piece from a feather twice the width of the required wings and work between the thumb and forefinger until it is rectangular in shape. Double it down the centre in the direction of the fibres—not across them. Hold it tightly on to the hook with the left forefinger and thumb in the position indicated in Figs. 11 and 12. Then throw a half-hitch over the end of the wings and tighten down.

The method of dressing the May fly is very similar to that of the dry fly. The wings are fitted first (Fig. 13), and the body and hackle are then applied, and peacock herl is added last, as in Figs. 14 and 15.

These primary rules may be varied according to the type of fly being tied, but the main essentials lie in pulling up the silk tightly and knotting off securely with light and dainty touch. Patience and suitable materials are also essential to success.

CHAPTER VIII

HOOKS

ENGLAND supplies the world with hooks. Very few countries make hooks outside these isles, and certainly none can compare with the British for quality. This monopoly is justly maintained by constant improvement. In no other sort of tackle is the skilled angler more exacting, and he rightly expects to get hooks to suit his own individual taste, of perfect temper, keenly pointed and of a bend that has been found best suited to his particular locality. This has led to extremes, and if anything there is too great a variety of hooks to choose from, many being of fantastic shapes and of little use and causing considerable confusion in sizes and scale, the diversity of patterns forbidding a really inexpensive hook being manufactured.

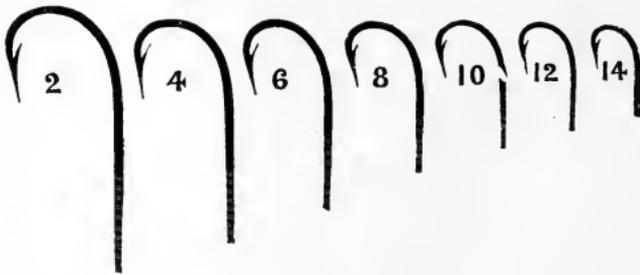
The angler, in choosing hooks and gauging their size, must first of all make himself acquainted with the fact that they are made under two scales of sizes. The old Redditch scale, of which the finest is 18, work up numerically backwards to size 2, 1, and then 1/0, 2/0, 3/0, etc., for the largest sizes. This scale usually applies to hooks to gut. The new scale is perhaps simpler, starting at the smallest hook of 0000, or 000 and working up in gradually increasing sizes to 0, 1, 2, 3, and so on. Trout flies are usually gauged in these sizes. But it seems a pity manufacturers cannot adhere solely to the new scale, as the two numbers may cause a lot of confusion when ordering.

There are three points to notice in order to distinguish good hooks from bad: (1) The temper. If the bend of the hook will pull out, the metal is soft. If it snaps off under reasonable pressure it is too



EYED KENDAL SNECK HOOKS.

brittle. (2) The barb should not be too deeply cut, or the hook will break off there. (3) The point must be sharp and not too outwardly bent. However, hooks nowadays are usually so carefully tested that defec-



MODEL PERFECT HOOKS, WITH TAPERED SHANKS.

tive ones of any well-known British make are rarely to be found.

The most familiar types of hooks to-day are the KENDAL SNECK, one of the best for fly fishing; the LIMERICK, the general all-purposes one, perhaps most used for salmon flies; while the CARLISLE, ROUND

BEND, MODEL PERFECT, HALL'S EYED, SWAN and KIRBY are all in general use.

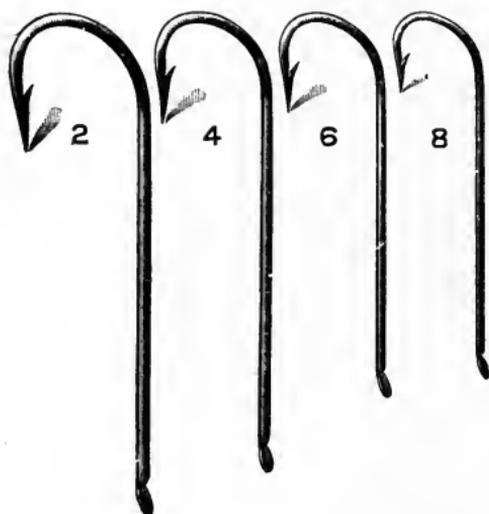
Most of the various forms or bends of the hooks now in use were introduced before the present century. Of these there have been many modifications and variations. One of the oldest bends is the Kirby, the originator, Charles Kirby, having flourished in the seventeenth century. In the quaint old book "The Angler's Vade-Mecum," third edition, published 1700, of a copy of which the writer is the proud possessor, the following advertisement appears :

"At the Sign of the Fish, in Black Horse Alley, near Fleet Bridge, liveth Will Browne, who maketh all sorts of Fishing Rods, and selleth all sorts of Fishing Tackle; also Charlie Kirby's Hooks with Worms, Gentles and Fly's; and also the East India Weed, which is the only thing for Trout, Carp and Bottom Fishing, first being well soaked for half an hour before you use it in water, being of a brittle nature, if not moistened before used, and then proves so strong and fine, of a water colour, that it deceives the Fish, much more than Hair or Silk. Note—That Kirby's Hooks are known by the fineness of the Wyer and Strength and many Shops sell Counterfeit for his, which prove prejudicial to the User. The true Kirby's are to be sold by Will Browne and nowhere Else."

There is a tendency nowadays to use smaller hooks for all purposes, and it is nothing uncommon for trout and grayling flies to be dressed on hooks as small as 000 and 0000. For grayling particularly a small and delicate hook should be used, as this fish is more fastidious than the trout and is the most tender-mouthed fish that swims.

The reduction in size of hooks called into every-

day use by anglers is undoubtedly due to the fish, particularly in overfished water, becoming "educated," so that they know a hook or an artificial fly when they see one—so much so that the rough and ready made flies and tackle will not kill fish as of yore. But each year greater and more subtle skill is called for in tackle making if good sport is to be maintained. Fish are extremely keen of vision for near objects, and the delicate tints of the fly or gut cast do not

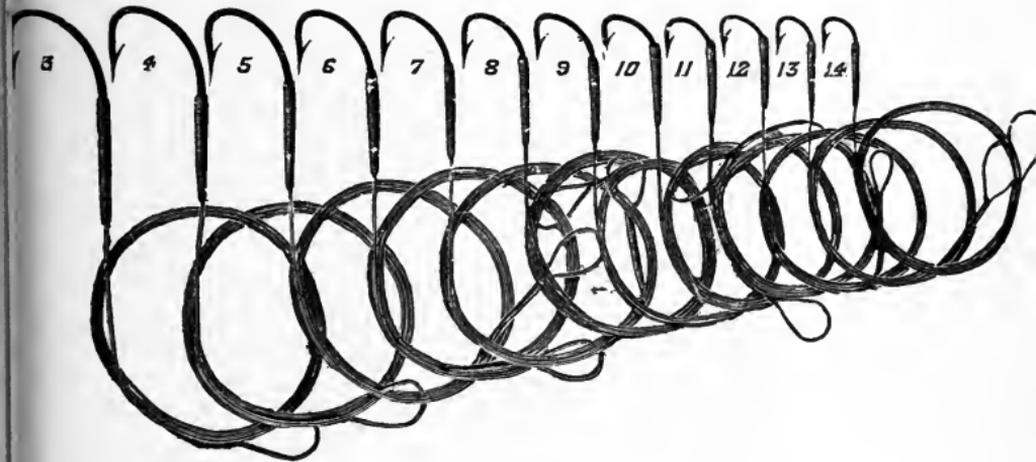


TINNED LONG-SHANK HOOKS, FOR SEA FISHING FOR WHITING.

escape them. Yet their optic nerves cannot be very sensitive, for to the author's knowledge a fish has been hooked and broken away, only to rise again in a few minutes to another fly and be safely landed, and the last broken hook was piercing the eye, so that the same fish rose within a few minutes of injury to feed again. This insensitiveness to pain should satisfy the most tremulous that angling after all is not such a cruel sport.

The range of size in hooks is tremendous, varying

from the tiny trout fly, midge or smut to the giant shark hooks with chain attached. Double hooks particularly have just come into vogue, a firm in the Midlands making a speciality of tiny double hook trout flies. Eel hooks are usually double and pike gorge hooks are double and crooked. Treble hooks are largely employed for spinning tackles and in extra strength for mahseer in India. Tinned hooks are specially adapted for sea fishing, as they are rust-proof and their colour seems more favourable for



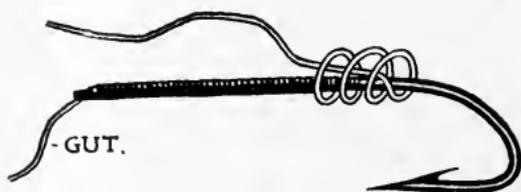
HOOKS TO GUT.

mackerel and whiting. (See illustration for the long-shanked pattern used for whiting on p. 50.)

In concluding these general remarks on hooks, it is fitting to acknowledge the supremacy of this British industry. We are largely indebted to Messrs. Allcock and Co., who have always kept up such a high standard of quality and so willingly carried out new ideas and suggestions submitted to them.

The most familiar style of hook is a Limerick or crystal bent hook attached to a 9-inch or 10-inch piece of gut, used for worm fishing and various styles

of bottom fishing. To attach gut to a hook, wax some fly-tying silk, hold the hook between the thumb and finger of the left hand and commence to wrap on the silk from the tapered end of the hook, wrapping firmly towards the bend. Every precaution should be taken to see that the silk is firm and not loose when the start is made. To finish off, make four loops, insert the end through them, and then wrap off from the first loop and pull tight, just as in finishing off the binding of a rod ring. Smooth and wax the wrapping and apply celluloid varnish.



HOW TO TIE A HOOK TO GUT AND TO FASTEN OFF THE SILK.

Here is a useful recipe for making celluloid varnish which is impervious to wet: Get a piece of old film from a photographer and dissolve in amyl acetate or acetone, procurable from any chemist. If the varnish is required hurriedly, the solution will dissolve quickly if the old gelatine is soaked off the film first by hot water or strong washing soda. The consistency can be varied by using more or less of the solvent.

CHAPTER IX

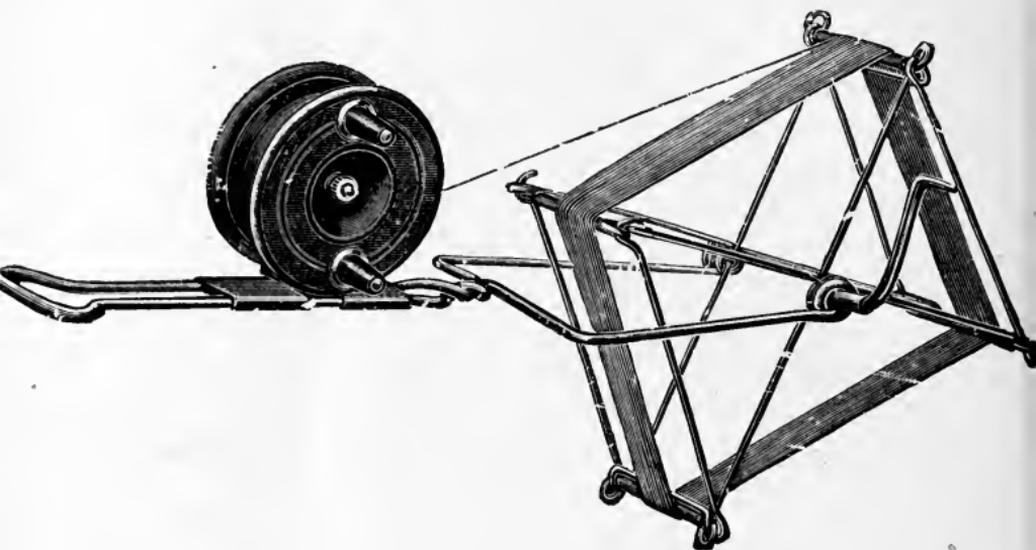
LINES

THE majority of writers on angling subjects pass over the subject of lines very abruptly, and many practical fishermen are apt to do likewise. Great care and attention are devoted to the choice of the rod, but the selection of the line is not given the thought it deserves. The line and the rod are really as one, and in the ideal combination they work as one unit, the line following every movement of the rod. Weight, thickness and breaking strain all play their part. Those who are just initiating themselves into the art of fly casting or bait throwing are often considerably handicapped by the use of lines totally unsuitable to their rods.

The light bait caster in embryo finds considerable difficulty in accustoming himself to an extremely fine line, which, it is true, appears far too light and slender for practical purposes. But very few anglers realise that a pure plaited silk line loses considerable strength in proofing. The writer can safely testify that anyone who will carry out the simple experiment of proofing a few yards of fine silk line and comparing the proofed and unproofed will be astonished at the difference in strength. A really tiptop quality unproofed silk line is very elastic and its tensile breaking strain when fully extended from the reel is very high. So that the unproofed silk line has the initial advantage in strength for bottom fishing, sea fishing and spinning;

but provision has to be made for deterioration, and lines of this type must be well dried on a line dryer after use or their life will be short.

The waterproof line of good make has been known to withstand twenty years' use, so the best should always be chosen. For fly fishing a line tapered at both ends is a practical economy, as it can be reversed,



LINE DRYER AND WINDER.

and also tapers nicely down to the gut cast. With fly rods especially the line should be chosen to balance the rod and of a size that will not put undue strain upon it. Too fine a line is difficult to cast with on a stiffish-actioned rod. For wet-fly fishing a fine waterproof level line should be used.

Fishing lines on the market may be divided into two sorts—those with external rubber-like enamel dressing, and those with a thinly polished silk running surface. The former with their enamel surface are very smooth and pleasing in appearance, but liable to

go sticky if exposed to a warm, damp atmosphere or put away wet in a warm room; they will also quickly become sticky if shut up in a reel box that is not ventilated. This highly finished external dressing in time wears away, leaving a coarse, sandpaper-like surface very harmful to the rod rings.

Lines that rely on the silk for the running surface are by far the best; the thin external polish may wear off after a few casts, leaving a delightfully smooth, waterproofed silk running surface which will last for years. Lines of this type should be rubbed down with a good line dressing, or fat free from salt or soda, or a little raw linseed oil. There is no rubber-like surface to cling to the rod rings, but the line shoots cleanly and rapidly through them. The danger of its becoming sticky can be ruled out altogether.

No work on this subject would be complete without reference to the metal cored line, which has proved a great boon to the angling fraternity and has the recommendation of such eminent authorities as R. B. Marston, Wm. Senior, G. M. Kelson, H. Cholmondeley-Pennell and W. Murdock, to mention just a few. The metal centre provides just the necessary weight and driving power that enable a line to be thrown against a wind and also adds several yards to the length of the cast; at the same time the extra weight is not enough to interfere with its floating qualities. A fine unproofed 000 size of this line is available for bottom fishers. This line is known as the "Acme."

A useful receipt for *waterproof lines* is appended which will not unduly weaken the breaking strain: Soak the line in poppy oil for twenty-four hours. Then stretch in the open air between two posts and wipe off all superfluous oil with a piece of cloth. Or

leave the line to dry stretched out in an airy and sunshiny room for a few weeks; then wipe down again with a cloth well soaked in the oil mixed with a little best copal varnish. The line should be wound in a large coil and hung in a warm room to dry thoroughly for two or three months. When ready for use wipe down with raw linseed oil or a good line dressing such as Servator. Warning: Never dry a line in or near an oven.

To cure a sticky line, dust with talcum powder, French chalk or fuller's earth. Several applications may be necessary. If the line is in a very bad state soak in methylated spirit for a few days until all the old dressing is dissolved, and then re-dress as above.*

* Poppy oil for the purpose can be obtained from H. W. Dix, Chemist, 19, Commercial Street, Pontypool.

CHAPTER X

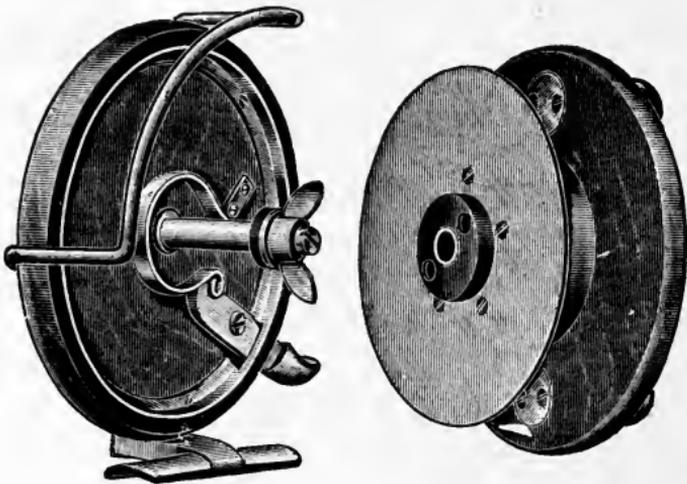
REELS

THE last few years have seen the fishing reel revolutionised—in fact the latest design is on principles quite opposite to those of our grandfathers. The great width between the front and back plates has been changed for the narrow, contracted reels of to-day, and this is of considerable advantage in winding in, though the line-holding capacity is rather limited. The thin axle is now enlarged into a wide drum, so that a multiplying action is deemed unnecessary. The simplicity of the earlier reels was a striking feature, whereas in the new patterns levers and “gadgets” of every description are to be found. Brass reels, too, are somewhat out of favour; aluminium and alloyed metal ones, on account of their extreme lightness, being more popular.

For the trout fly fisher a good aluminium reel with wide drum and contracted frame, easily accessible for oiling and cleaning, will meet all needs, such as the “Take Apart” reel shown on p. 58. An addition of an optional check may be required if occasional worming and spinning be practised. Ball bearings are not only quite unnecessary but add undesirable weight. For sea fishing aluminium is barred as the action of sea water sets up corrosion. A reel of walnut, brass-lined to prevent swelling or warping, is usually employed, with an optional check. A lever brake may also be found useful for long distance



A MODERN "TAKE APART" FLY REEL.

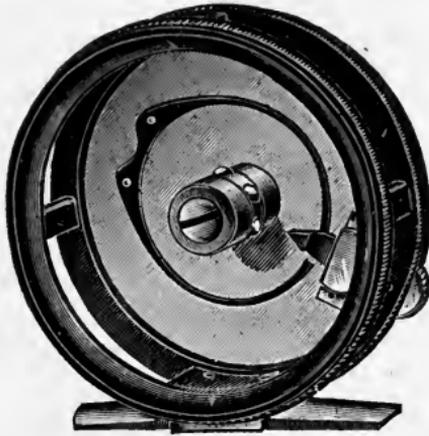


SEA REEL, WITH LEVER TENSION.

casting with a bait. Bottom fishing reels are now to be bought *in excelsis*—very neat contrivances, on the centre-pin principle with neat line guard, perforated

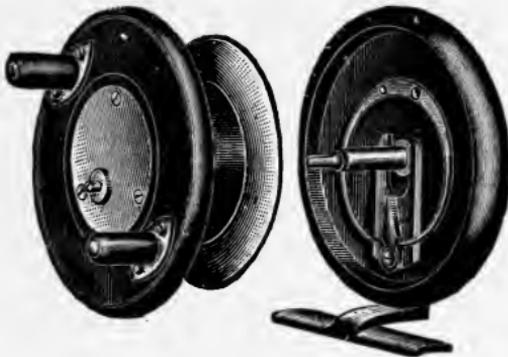
aluminium lightweight frame, and an extremely wide but narrow barrel almost the total diameter of the reel. Such reels are very good for roach fishing.

It is with the spinning varieties that the greatest



A BALL-BEARING REEL.

strides have been made, and the typical salmon spinning and light bait casting reel is a model of engineer-

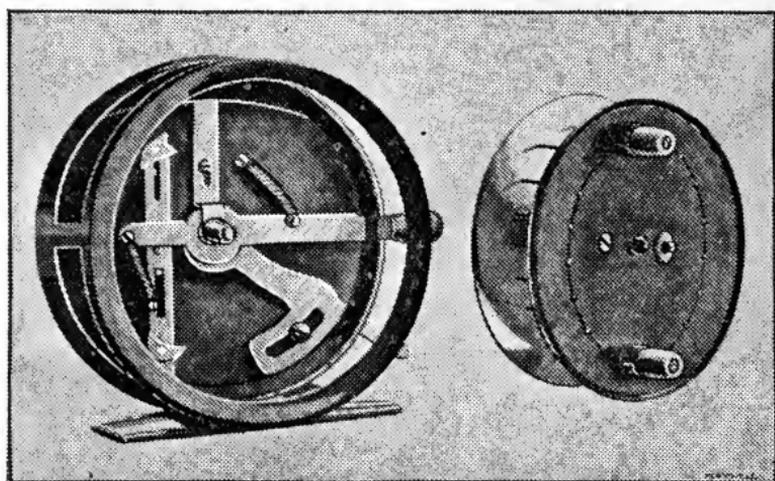


CENTRE-PIN ACTION REEL.

ing skill and perfection. The art of successfully throwing the bait is not easily acquired, but with the help of an up-to-date reel with every lever and tensioning device quickly accessible it is more readily

learnt. The two actions of performing the cast and manipulating the reel must, however, be as *one*, and until these combined movements can be performed easily and mechanically a successful cast cannot be made.

The spinning reel has three principal duties: (1) The rotation of the drum should be held in check as in the case of an ordinary reel, and the ratchet or check should present the strongest resistance to the fish



SPINNING REEL, SHOWING INTERNAL MECHANISM.

and less resistance to the action of winding in the line. (2) The check should be easily movable and freed from the ratchet, so that the reel will run free when required. (3) There should be an adjustable tension that can be instantly applied to impede the unwinding of the line and prevent overrunning when the pace of the bait in the course of its flight is slackening. Seventy yards of line and upwards should be got out.

An ideal spinning reel should, therefore, have an

adjustable tensioning device, a free-running action and a variable check. A ratchet check is not essential. Many reels simply have a slight brake or drag when the reel movements are in the natural position, and only when a free-running action is required is the lever moved. Light bait casting adds greatly to the scope and experience of a day's sport. The Illingworth model of casting reels enables the daintiest of minnows on practically invisible tackle to be presented to fish within a wide range. Once hooked, there is nothing so thrilling as fighting a sporting battle with a big fish on light tackle. Even a grilse or salmon is often successfully landed.

The check of the ratchet plays an important part, and one of the latest improvements is to have the reel fitted with an adjustable check that can be regulated to the desired tension. The check is light and easy running for rapidity in winding in, but is stiffer in its reverse action to prevent overrunning when paying out the line. By altering the little nut provided for the purpose, the tension can be adjusted at will, so that by using the regulating check all striking may be done from the reel. An optional check is fitted to many patterns of reels, particularly those used for spinning and sea fishing, so that the check can be dispensed with altogether by switching off the check movement at the back of the reel.

A reel of the Illingworth type will only hold the finest unproofed plaited silk line, which runs freely off the drum as the bait is cast for between 30 and 50 yards, if with a favourable wind. There is no check on the reel, but the line is coiled in with the left hand after each cast, and the reel picks up the line automatically. The reel is usually employed in con-

nection with a short 7 or $7\frac{1}{2}$ feet built cane rod, in action very much like a stiff fly rod, but fitted with frictionless agate or porcelain rings throughout.

The Malloch pattern reel is familiar to most anglers and deservedly popular, as it is simple to use. The drum swivels round on the reel seat at right angles to the reel for making the cast; the line will then coil straight off the reel without the drum rotating.

Ariel spinning reels are used in many branches of

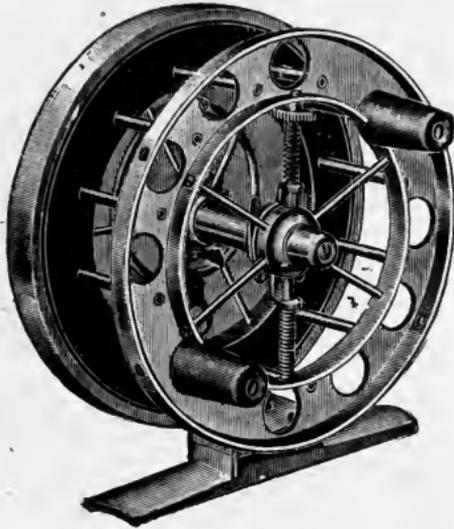


MALLOCH CASTING REEL.

fishing, as with the centre-pin action the reel drum runs with delightful freedom and will spin for several minutes when set in motion. They are made either in walnut and ebonite or in perforated aluminium, and their skeleton frames ensure extreme lightness. Each reel can be obtained with a central adjustable tension and optional check, and the mechanism is accessible in an instant for cleaning and oiling.

Multiplying action reels have never been popular in

this country (the wide drums for quick winding make them unnecessary), but in the United States such reels



ARIEL REEL.



LEATHER REEL CASE.

are universally used, as in that country anglers favour a narrow axle and a wide distance between the front

and back plate. Automatic reels which wind in on a clockwork principle are also occasionally met with.

Reels most to be avoided are those with crank handles, around which the line will get entangled at a critical moment. In view of the great reduction in weight of all modern rods, correspondingly lighter reels are called for, and the heavier patterns are no longer necessary to balance the rod, but are undesirable where comfort in fishing is to be considered.

It is important that reels should be kept well oiled and plates clean and free from grit. An accumulation of dust and dirt is best prevented by keeping the reel in a "string-up" wash-leather case, or a leather-shaped reel case will prove a great protection from damage.

Axiom: "Never drop a reel."

CHAPTER XI

GUT AND GUT SUBSTITUTE

HORSEHAIR was used in years gone by, but for a long while silkworm gut has been in general use for fishing purposes. It is mainly a product of Spain. Gut may be either natural or drawn. The former retains its skin, while the latter has been drawn through jewelled plates, reducing its size to the finest proportions. The thickness of the gut is graduated into sizes in descending order of fineness—1x, 2x, 3x, 4x, 5x, 6x. Nothing finer than 4x is to be recommended except in extraordinarily clear water for fine roach fishing. The finest sizes are not to be obtained in natural gut. The advantage of natural gut lies in its strength and its ability to withstand wear and tear without fraying out. But drawn gut is to be preferred for fine fishing in clear water. Tapered trout casts, gut points, hooks to gut and one-yard gut bottoms are usually made of drawn gut. Spinning traces and tackles, salmon and sea trout casts can all be made of natural gut. Although natural gut is the stronger, not so liable to fray, and better able to withstand wear and tear, it must not be understood that drawn gut is inferior. On the contrary, drawn gut is largely used and is capable of landing very heavy fish even on the finest drawn strands.

To make a gut cast, either tapered or level, take some long strands of either natural or drawn gut, and examine each strand for any weak or flat places. The best gut is clear and round, and no inferior pieces

should be put into a cast. The finest strands should be arranged so that they will come at the fly or bait end. Soak the gut in a saucer of water for half an hour and then proceed to link up the strands with a fisherman's knot consisting of two sliding slip knots as illustrated in the Frontispiece (Fig. 1), only there will be no dropper to insert between the nooses. Pull the two knots up firmly and cut off the waste ends. When the cast is of the required length it is usual to have a loop at one end or sometimes both ends. The loop knot may be made by a half-hitch formed on the loop as shown on the Frontispiece (Fig. 3).

All gut is liable to deterioration, and should be kept away from the sun and not exposed to the light more than is necessary. In a few months new gut may lose its natural oil and become dry, brittle and quite unusable, and it has hitherto had to be thrown away. But there has recently come on the market a preparation which restores the natural oil to gut, and casts or tackles kept completely immersed and shut away from the light will thus retain their strength unimpaired for years. They can be taken out of the stock solution and used, but must be dried before being put back. The preparation is called *Servator*, and is purchasable in small bottles or in an extra large stock size at quite a small cost.

In its raw state gut is white, but for fishing it is usually preferred tinted smoke-blue. A pale olive or water-weed colour is much in favour, and sport may be obtained by using olive-coloured casts when others fishing with the usual coloured gut have failed. A deep sea-green colour is very good for sea fishing. Bottom fishers, when reddish mud or sediment has discoloured the water, often fish with amber or pale

coffee-coloured gut bottoms with gilt hooks. Fish can see the gut silhouetted against the sky, and in very clear water with unruffled surface good transparent gut of finest size must be used if success is to follow. However, a cast if skilfully dropped on the water does not necessarily frighten the fish, for it is not an unknown happening for trout to rise to a knot on the cast.

When gut is being knotted or tied, too much emphasis cannot be laid on the fact that it should be soaked for half an hour in a saucerful of lukewarm water, as even the very best gut is brittle enough to break when tied in a knot unless it is first of all thoroughly moistened. When actually fishing and one is obliged to take a new piece of gut, it can be moistened in the mouth for a few seconds, and this method is better than not wetting it at all.

“Fish fine” is one of the fisherman’s axioms, and for that reason a tapered cast can be presented more gently and accurately than a level cast, as the end tapers off gradually to the fly like a very fine whiplash and therefore the thicker portion will be out of range of the fish’s vision. For wet-fly and bottom fishing a level cast is the best. Heavy salmon casts are not infrequently of twisted gut at the thickest end.

Flies tied permanently on gut are now little used. It is much better to attach a 12-inch fine gut point to the eye of the fly, and the fly can be reattached on the cast on fine or stronger gut as the occasion warrants.

The most important knots used for gut are illustrated in this work, and a brief description will suffice. The first diagram (see Frontispiece) illustrates a useful knot for attaching droppers. These are used when

two or three flies are attached to the cast, the extra ones being attached on 10-inch gut points hanging from the cast. By this means two or three fish can be landed on a single cast.

Perhaps a word here in reference to cast dampers would be appropriate. Casts are best carried in a round aluminium or gun-metal box between felts which are usually kept moist; but it is a great mistake to leave casts in the damper, as they will quickly become rotten if left damp. The better plan is, as already suggested, to soak in warm Servator, and then to place in the cast box with Servator on the felts, which will keep them pliable and ready for knotting without any deterioration.

It is wrong to speak of "gut substitutes." In reality there is but one substitute for gut of practical utility, and that is the commonly called gut fibre, sold under various names. A reliable brand can be employed with economy in various branches of fishing. It is enormously strong, and has the advantage of being sold in lengths of from 5 yards up to 40 yards without a single knot. It is absolutely necessary to soak it thoroughly before knotting, and among its other disadvantages are that it is not so transparent as gut, is apt to fray, and lacks elasticity. The frayed bits can be burnt off by passing the gut through the flame of a gas burner or a candle.

The angler will be wise always to buy the best gut, for it will prove to be most economical in the long run. The strength of his gut tackles will not rest in the breaking strain of the gut itself but in the strength or weakness of the knots. Therefore always soak gut well and pull knots up gently but firmly.

CHAPTER XII

BAITS

SPINNING has a charm over other branches of the piscatorial art, and the angler who is a practised spinner usually prefers it to fly fishing. It owes its attractiveness to the fact that a cast may be made in a likely spot with the confidence that if there is a big fish lurking there it will almost certainly be captured. Also, the bait must be constantly watched while it is in the water to prevent it from becoming caught on the river bottom or entangled in weed. Spinning is undoubtedly the best sport bringer for big fish.

No other type of fishing gear offers such a wide choice, for the name of spinning baits is legion. The great majority, however, are fantastic and unsatisfactory. There is no need for any angler to carry a wide assortment of shapes and sizes in the form of artificial minnows, spoons, baits, etc.

All spinning tackles have one peculiarity in that they require suitable swivelling to take out the twist imparted to the line, with one exception, and that is the New Turbine spinner, which has just been protected. It represents the last word in bait construction and imparts practically no twist to the line. Most of the old-pattern spinners and spoons have fallen into disuse. The appetite of certain fish certainly seems to undergo a change, for it is an undoubted fact, which perhaps applies particularly to pike, that what will kill well on a certain lake or river one

season will hardly obtain a fish the next. However, most fish are alike in their taste for silver or gold



NEW TURBINE SPINNER.

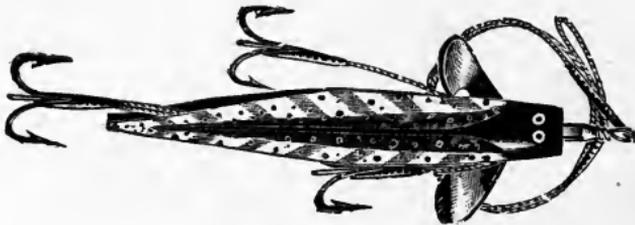
with a touch of bright red. Trout prefer gold and brown, and salmon and pike silver and blue.

Among the flanged type of baits, Devons; light or



"FAVOURITE" DEVON.

heavy (the "Favourite," as its name implies, is to the fore), Improved Phantoms, Wagtails and the Nature Series are all good killers. There is also a bait,

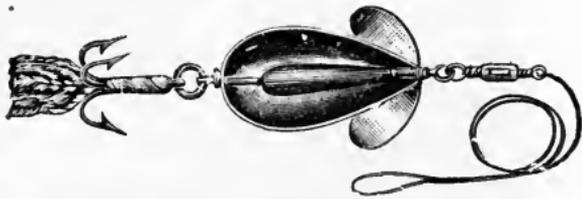


WAGTAIL BAIT.

recently invented by Captain Guy St. B. S. Watkins, with reversible fin, for left or right spinning, so that it can be reversed at will. This bait is fitted with a

single tail hook with no wrapping to get frayed, and altogether is a good sporting bait.

Spoon baits are in large variety, as they will be taken by almost any fish from a small trout to a giant deep-sea fish. The principle is practically the same in all of them—a spoon-shaped piece of metal, silver or gold plated on the outside, with bright red paint inside and single treble tail hook masked with a tassel of red wool, swivel at the head and often a bent flange at the head of the spoon to impart a rolling motion. A tiny flying spoon to which is attached a single hook is very attractive to trout.



COLORADO SPOON BAIT.

The theory of bait spinning is founded upon the well-known propensity of heavy fish for weakly fry, and the well-spun bait is often seized from the very midst of a shoal of living minnows. Success will depend on the angler's skill in spinning the bait. So deadly may this branch of sport become that to some it is considered unsportsmanlike. But if the new method of a single treble hook at the tail of the bait is adopted, and it is practised in clear water, the accusation is falsified.

The sea fisherman very frequently uses an artificial sand eel, consisting of a tinned hook covered on the shank with white, red or green rubber tubing, tapering off to a tail. A bright metal spinner at the head

is often used to advantage, or similar baits can be bought covered with soleskin and painted in blue and silver.

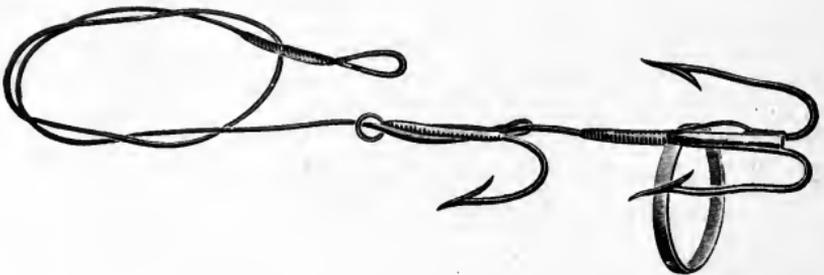
Live-bait fishing with gorge tackle is to be deprecated and is seldom resorted to by anglers who fish



SAND EEL FOR SEA FISHING.

as sportsmen. Apart from the cruelty in mounting the live minnow, which is so injured that if returned to the water it will certainly die, the greatest objection to it is in pike fishing, for the pike swallows the bait whole and is generally hooked in the stomach, causing extreme pain, so that the fish can give no sport, but is usually hauled up like a log.

But the snap tackle method is both sportsmanlike and humane. The Improved Jardine, "Perfect" and

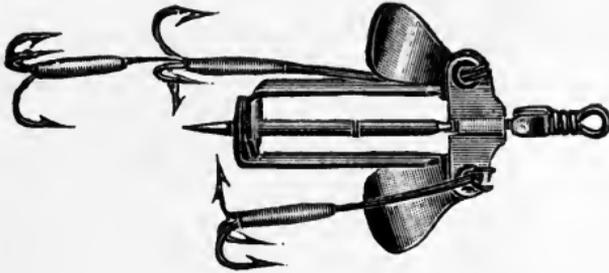


"PERFECT" SNAP TACKLE FOR LIVE BAIT.

"Bickerdyke" snap tackles are the most easily adjusted, and the live bait lives longer on them than on most other patterns.

Tackles and mounts not infrequently become frayed at the silk wrapping owing to the bait chafing or by

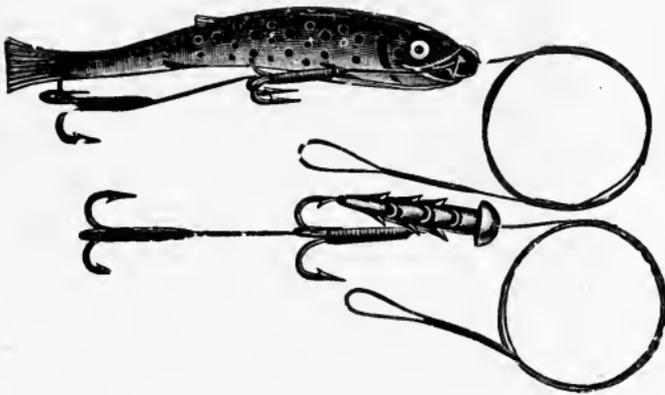
their rubbing on rough stones on the river bed—so much so that their efficiency is jeopardised. The best method is to buy tackles bound lightly over the



THE "LEE-LOCH" SPINNING TACKLE.

wrapping with fine plaited copper wire, or the angler will have little difficulty in wrapping it himself, and no further annoyance in this respect will be caused.

Spinning the dead minnow will fill the creel with



ARIEL TACKLE.

big fish and is especially deadly for pike when a minnow tackle such as the "Lee-Loch" is baited with a preserved dace, small roach, large minnow or loach. The tackle best employed is one with a small spinner at the head and a needle not infrequently loaded with

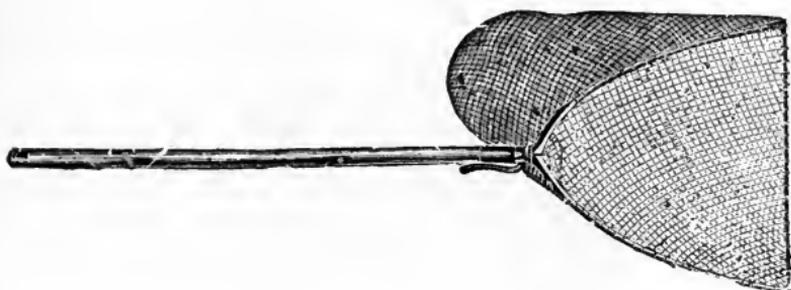
lead, which is inserted in the fish's mouth. For light bait casting with the natural minnow, an "Ariel" tackle will be found the best, consisting of a flight of hooks and a serrated lead mouthpiece. The illustration on p. 73 shows the method of mounting.

CHAPTER XIII

LANDING GEAR—NETTING

LANDING NET.

THE landing net is the scapegoat of the angler's equipment, concerning which the wielder of the rod is apt to be very exacting. It must be at hand at a critical moment, efficient and yet unobtrusive, light, yet strong enough not to give way in any circumstances. No other article receives so much abuse and such little praise for a duty efficiently performed.

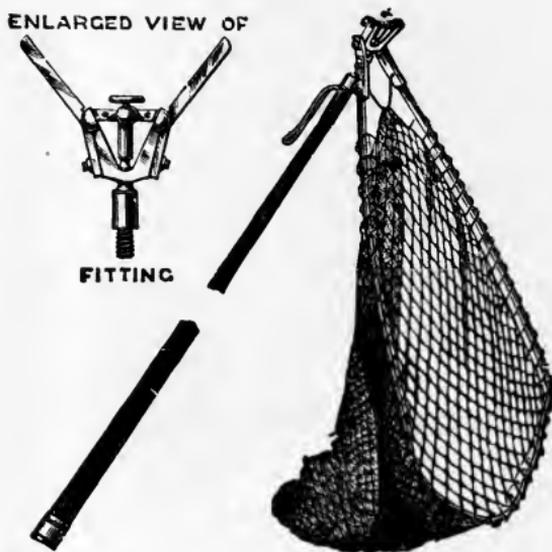


PLAIN LANDING NET, WITH CLIP ON SHAFT.

The inventor's genius has been sorely tried to meet these demands, and the result is a motley variety of landing bows and nets. However, quite reliable and highly satisfactory landing nets have been evolved during the last few years. The only detriment is their cost, for good collapsible bows and handles are very expensive.

The simplest form of landing net is the plain cane shaft with standard thread socket to take the bow, a plain round metal bow or a pear-shaped wood one,

and a net which can be bought very cheaply. But an outfit of this sort is cumbersome to carry about, especially throughout a day's fishing, so that a collapsible bow is usually called for. Here we get a wide choice, in which there are many pitfalls. One type of net known to the writer has a habit of collapsing at the wrong moment—as soon as the fish is received therein, with dire results. Another type of



DROP-OVER BOW, SHOWING LOCKING CLIP.

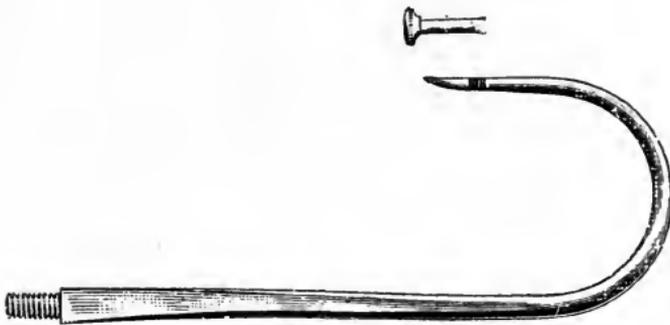
metal bow cuts the net like a pair of scissors when folded. To land a good-sized fish the bow must be rigid and strong when in action, or the fish will be lost. The most approved type of folding bow is the triangular shape, which drops down and is locked when open with a spring catch. A useful type is the split screw with metal sides, commonly called the "Parson." This pattern will last for years, and there is nothing to go wrong.

The landing outfit is still incomplete for the fly fisher, as when wading it is impossible to keep a landing net at hand when moving about and both hands are required to be free. To meet this the handle should collapse and hook on to the belt or



TELESCOPIC LANDING BOW.

shoulder strap by means of a clip. The spring clip should be attached near the head of the shaft, as that will balance nicely with the bow ready for action, and the net can be seized by the left hand in an instant and brought into play. Jointed handles are fitted with a hinged knuckle, which folds right over and will lock



GAFF HOOK, WITH PROTECTED POINT.

itself straight and rigid when extending. When folded, the length of the shaft is reduced by almost half, kept clear of the ground, and can be hung suspended from the left side.

On some salmon rivers the "tailer" is used for landing fish. This consists of a running noose like a stiff whip shaft and lash, which, when slipped round

the body of the fish, tightens, and the fish can then be raised into the boat or on to the bank.

The gaff hook is the surest way of landing fish, and is invariably used for pike. A hook can be bought of the requisite size and standard thread to fit into the landing shaft. For salmon a collapsible metal telescopic shaft with hook is made with protected point, and is very compact and portable.

A HOME-MADE LANDING NET.

Netting is an art not difficult to acquire, and it comes in useful for making articles for household needs and in outdoor sport. For instance, a hammock can be made for the garden, the rent in the top of the tennis net mended, a cricket practice stop net made for the boys, or a bag to take shopping, etc., apart from such a useful commodity as a reliable landing net.

The tools required for making the meshwork of a landing net are a netting needle, a mesh stick, a ball of watercord twine, and 4 feet of string.

The needle, 8 inches long, $\frac{3}{8}$ inch wide, $\frac{1}{8}$ inch thick, can be cut out with a fretwork saw out of some hard and thin fretwood. The mesh stick should be oval, about $\frac{3}{8}$ inch wide and $\frac{1}{4}$ inch thick at the stoutest part; it is usually of bone, or some hard wood or metal will serve. Its purpose is to regulate the size of the mesh, and the width should therefore vary according to the size of mesh required.

The watercord is then wound on the needle by bringing it under the tongue in the centre of the needle and along the same side, as in Fig. I., until the needle holds as much as will go through the meshes. Take the loose end of the cord, tie a loop at the

FIG. I.



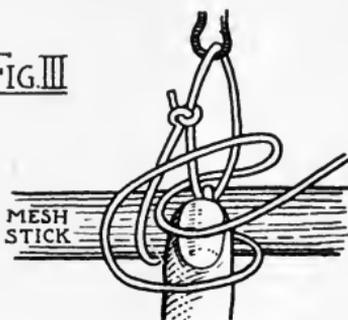
NETTING NEEDLE SHOWING MANNER IN WHICH TO WIND CORD.

FIG. II.



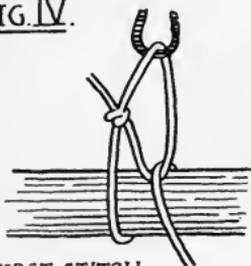
NETTING KNOT

FIG. III.



MAKING THE KNOT.

FIG. IV.



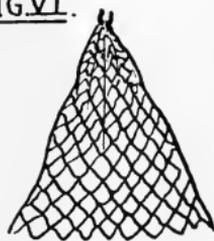
FIRST STITCH

FIG. V.



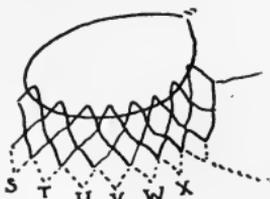
CHAIN OF MESHES.

FIG. VI.



READY FOR WORKING ROUND TOP.

FIG. VII.



ROWS FOR MESHES.

FIG. VIII.



FINISHED NET SHOWING DOUBLE ROW ROUND BOW.

MAXWELL



termination, and with the mesh stick in the hand carry the cord round the stick, thread through the loop of string and tighten to hold the cord in position. The most convenient way is to work on to a piece of string carried round the left foot under the heel. On to this string attach a smaller loop of string to slide along. The thumb of the left hand is placed on the cord and mesh stick, and the cord carried round the stick from behind, as shown in Fig. III., the needle passing by the first loop but through the second one. Draw the cord up tight, and the first knot is complete.

In making the knot, the thumb must hold the cord on the mesh stick firmly, and not be released too soon, and the thumb will assist in tightening the knot when completed. Otherwise, if allowed to slip, a sliding hitch will result instead of a proper netting knot. The first mesh (as Fig. IV.) having been completed, the mesh stick can be pulled out, and the next stitch commenced and knotted beneath it, as at A, Fig. V., and others in succession (B, C, D, E, F), until a chain of twenty meshes or so has been completed. The chain can then be taken off the loop of string. Since this first loop made will be of different size, it can be untied and the loop cut off.

The meshes A, B, C, D, E, F, should now be threaded on to a piece of string and tied together to form a loop, which can be put round the foot on the floor while another row of meshes are worked (s, r, u, v, w, x, Fig. VII.). The mesh stick itself can now be left in position, and not taken out at the completion of each stitch. The completed stitches being slipped along the stick to the left, as they are completed on the right-hand side, make the same

number of stitches on each row. We then start another row until a square piece of net is completed.

Place the string loop in the centre of the square and continue to work round the bottom meshes until the net is of the desired size (see Fig. VI.). Finish off by working the last row in double cord or a slightly stouter cord.

If the material is sound to commence with, the net will last a number of years, provided of course it is not stowed away wet and left to rot. But many anglers prefer a waterproof net. A useful dressing is to soak the net in a shallow vessel containing poppy oil; all superfluous oil should be wiped off and the net spread out to dry, preferably in the open air. Or a quicker drying method is to mix some boiled linseed oil with some quick-drying copal varnish in equal parts. All blobs of oil should be wiped off when the net is stretched out to dry.

Other types of nets for angling purposes can be made on similar principles, including casting nets, drum nets for storing live minnows, drag nets, etc.

CHAPTER XIV

BAGS, CREELS, FLY AND TACKLE CASES, WADING GEAR

BAGS AND CREELS.

HAVING landed a pretty fish, the next consideration is the best receptacle to put it in and also to carry tackle and lunch. There is an old saying that the skill



CREEL : " PERFECT " MODEL.

of the angler can be judged by the size of his creel, and certainly the creel has its advantages, as the " would-be wits " on the journey back to town cannot judge the size of your catch in the same way as with

a bag, which when empty adds a further burden to a poor day's sport. The wicker creel has yet another advantage: a good quality one is strong enough to sit upon. A very unpractical angler once made a creel so that the fish could be shot in through the opening in the lid, but there was no provision for getting them out. There should be easy access to the bottom of the fishing basket for cleansing purposes, a



FISHING BAG WITH FRONT POCKET.

detachable tray or lid to the top of the basket usually being provided for the purpose, such as shown in illustration on p. 83. Provision is also sometimes made for waders, brogues and coat, which can be attached to the lid by special straps affixed to the creel.

Fishing bags are lighter and less in the way, and are made in waterproof material with one or more pockets. Bags should always be supplied with a detachable waterproof lining, so that they can be

washed and kept clean. When lunch and tackle are carried the compartments should be separate, as in the "Hold-All" bag, originated by Messrs. Foster Brothers, of Ashbourne. In this there are really two bags in one, entirely separate, and either or both can be used.

A good shoulder strap is indispensable. With a heavy bag or creel a poor thin strap across the shoulder will have a short life and is very uncomfortable. The "Facile" pattern is undoubtedly the best for ease and comfort in a day's fishing, and has the advantage of a strap that goes round the waist, on which a gaff hook or handle may be clipped, and which will also keep the bag or basket steady and in position.

FLY AND TACKLE CASES.

Hooks are awkward things to have lying about. They should be so kept that the wings and hackles are not crushed. A pocket box with spring clips or holders fulfils this purpose. Fly books are now obtainable with partitions for eyed flies, so arranged that the flies cannot be crushed; and there are also parchment pockets for flies on gut, tackles, scissors, tweezers, etc.

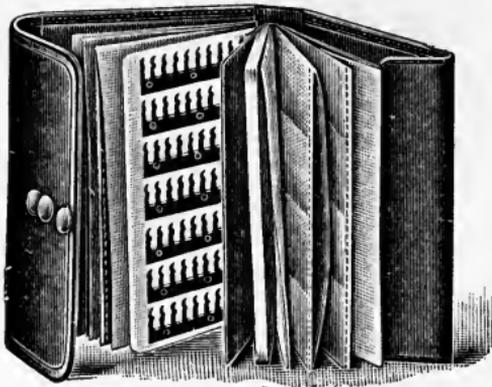
Transparent lidded boxes are much in favour, and a box equipped with tweezer and felts in the lid is very useful and compact. That well-known sportsman, Mr. H. Cholmondeley-Pennell, introduced a pair of combined tweezers and cutters which will cut the gut short and more neatly than the average pair of scissors.

Cast dampers are generally of the round variety with felts inside. The edges should be protected so

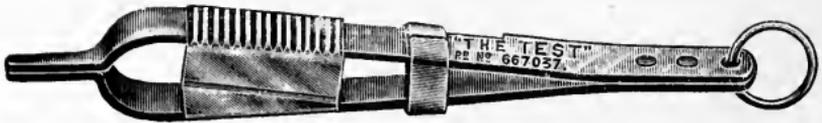
FISHING TACKLE



FLY BOX, WITH CLIPS.



FLY BOOK FOR EYED FLIES.



TWEEZERS AND CUTTERS COMBINED.

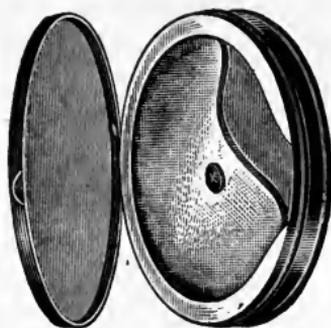
that the gut will not get caught in the lid and become damaged when the lid is closed down.

A really practical bait box has yet to be devised.

The nearest approach is a neat little black japanned box for the smaller baits, with rounded corners, movable aluminium partitions and leather pocket in the lid. Messrs. Charles Farlow, of London, have several useful designs in tackle and stock boxes.



TRANSPARENT LIDDED FLY BOX.



CAST DAMPER.

Larger boxes are made, but are generally too clumsy for carrying about. Each individual can usually rig up a tackle case best suited to his needs.

A good dubbin or material book or box is invaluable for all amateur fly-makers for keeping a stock of

necessary feathers, wool for bodies, etc., in compact form. A suitable one can be obtained from any tackle maker of repute.

WADERS AND WADING BOOTS.

One of the greatest angling secrets of success is keeping out of sight of the fish. Usually the fish face up stream with a sharp lookout on either bank, and it is no easy matter when fishing from the bank to keep



WADING MOCCASINS.

completely out of their range of vision. When wading, however, there is no risk of scaring the fish when fishing up stream, and otherwise inaccessible spots can easily be reached. Only the best double-texture waders should be employed; these are generally guaranteed and will last for years.

Two pairs of thick wool socks, one inside the waders and one over them, will preserve them from perspiration, which, being of a greasy nature, quickly rots rubber. When a distance has to be traversed, especially along a road or hard ground, a pair of

wading moccasins will be found to secure great ease and comfort to the feet and will help to keep them warm and prevent any risk of an attack of rheumatism.

Leather and canvas brogues are universally used, and these should be so constructed that no bits of grit can get down the gusset of the tongue, while the studs should be riveted in. Rubber brogues are light and comfortable, but do not adapt themselves to very rocky river beds; the metal studs also frequently



BROGUE WITH SANDPROOF TONGUE.

drop out. This may be circumvented by having studded leather soles fitted.

An ordinary mackintosh coat is too long for wading. A fisherman's short waterproof jacket should be worn.

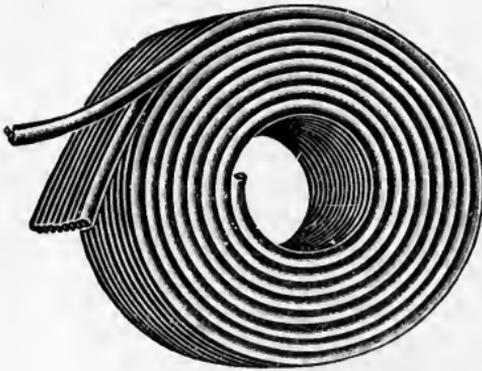
Waders cannot be repaired with ordinary rubber solution, and attempts in this direction will only end in dismal failure. But a special rubber solution that will firmly fix cloth to cloth can be obtained through a rubber manufacturer or a tackle house that specialises in wading gear, and repairs can then be successfully handled.

CHAPTER XV

LEADS, SINKERS, SWIVELS, FLOATS AND FLOATING PREPARATIONS

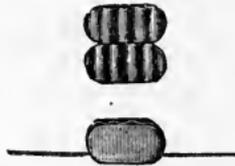
LEADS AND SINKERS.

SPLIT shot is the simplest form of sinker, though a more convenient form is obtainable in the ribbon



RIBBON LEAD.

lead, which is not easily lost like the pellets, and can be adjusted to any requisite size. The new corrugated



“WEIGHT AND SEA” LEADS.

hinged “Weight and Sea” leads introduced by Messrs. Allcock and Co. are very handy. The illustration will give some idea of the ease with which they can be adjusted.

For spinning, a spiral or adjustable lead, such as the "Lee," with a safety catch or clip for the line is unequalled and can be readily adjusted.



"LEE" ADJUSTABLE LEAD.

The pattern illustrated below, of the saddle type, is an anti-kink lead which can be used to counteract the twist imparted to the line in casting. It consists of a lop-sided lead with two swivels attached. The weight is all on one side, and "stays" the curl of the line.



1" INCH.

SADDLE LEAD.

In sea fishing an adjustable weighted lead can be used for varied sport. Conical and watch-shaped leads are the most popular form, and can be had in varied weights.



BALL SWIVEL.

Twice Original Size.

SWIVELS AND ANTI-KINKER.

Traces should be examined at intervals for faulty swivelling. Hitherto practically all swivels have been on the same principle, but the introduction of the Ball

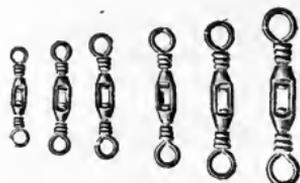
variety is an innovation to be welcomed, partly owing to their smaller cost, and partly because they are flexible throughout and immensely strong. They may be had two, three or four balled, as desired.

Link swivels are of wide assortment—good, bad and indifferent. The link should not have any projection that will foul the line.



LINK SWIVEL.

The illustration shows a useful design. Sizes are gauged from the smallest (12) to the large ones, 1/0, 2/0, 3/0, etc.



SWIVELS.

Sizes : 7, 8, 9, 10, 11, 12.

A flanged spinner or anti-kinker was introduced by Mr. Allen, from whom it has taken its name, and it has proved a great boon to users of Malloch reels without reversible drum. With this simple attachment, not only is twist prevented, but it is actually taken out of the line when in action.

FLOATS.

Improvements in floats are few, the Zephyr alone branching out on new lines; being made or wound in light waterproof material, it is light and pleasing to

fish with. In the failing light of evening is often the best time to fish, and at this period the float fisher is severely handicapped, as the float is scarcely discernible. The difficulty has been circumvented by the use of a glow-worm or phosphorescent-tipped float



LUMINOUS FLOAT.

which can be seen in the dark. A float of this type that has lost its luminosity can be restored by exposure to bright sunshine for an hour.

FLOATING PREPARATIONS.

The dry-fly fisher needs a good oil for floating the fly, which should also be applied to the cast and line



SAFETY BOTTLE.

to enable it to be picked lightly and clearly from the surface of the water. Such preparation as Mucilin, Servator, odourless paraffin and Mak-Float are all

first class, and the last-named will keep a fly on the top throughout a wet day. When oil is used, a safety bottle with a brush in the stopper is the most convenient form. However, bottle or tin is not always at



OILER.

hand when wanted, especially when wading, and to meet this contingency a neat little oil pad has been invented; it is shaped like a watch and fastened on the wrist or suspended from a button, thus being always at hand when needed.

CHAPTER XVI
PATERNOSTERS, TRIMMERS AND
SUNDRIES

PATERNOSTERS.

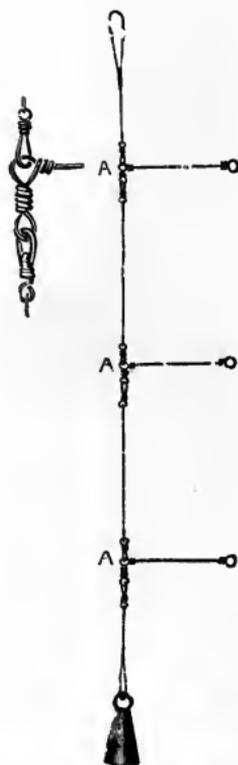
THE paternoster is usually employed in sea fishing, but is likewise used in live baiting for pike, also for perch, when several fish can be caught at a time. A lead sinker is fixed at the end of the tackle, and, at right angles to the line, baited hooks which swivel round on booms.



PERCH PATERNOSTER.

The sea paternoster is often made of metal throughout, with the hooks attached to twisted gut. For pike the hooks should be tied on gimp. In the case of perch the paternoster is made of 1x gut with three

hooks (A, A, A) attached at 12-inch intervals, the total length of the tackle from end to end being 40 inches. Drop the bait in carefully and let it remain on a tight line for a few moments, and if no bite takes



SEA PATERNOSTER.

place move to another spot. Deep quiet waters with a gentle eddy are the best.

TRIMMERS.

Trimming for jack or pike should never be resorted to unless it is desirable that the water should be rid of the fish or to reduce their numbers for the

benefit of other kinds. In olden days it was considered first-class sport to attach a line to a goose and see which came off the best, the fish or the bird. But in these more enlightened times this would not be considered sportsmanlike.

The familiar trimmer, consisting of a flat cork disc painted red on one side and white on the other, is the more usual method adopted for perch or pike at night. The line is wound round a groove cut in the disc and



TRIMMER.

the trimmers are floated all the same colour uppermost. When the bait is taken the disc turns over, showing a different colour, and so it is then known which has captured the fish.

BANK RUNNER.

Fishing with bank runner is akin to trimming and night fishing, especially when a leger lead and cork are used. The bank runner consists of a rounded wood peg which can be driven firmly into the ground; the top is shaped to form a spool on which the line is wound, as shown in the illustration on p. 98.

SUNDRIES.

Few sports, if any, present such a wide range of gear. Practically each species of fish, of which there are many thousands, requires a different bait or lure,



BANK RUNNER.

and it is to this infinite variety that the contemplative man's recreation owes its charm. In a small book of this sort, space forbids going into all details and re-

quirements in tackle for the various branches of the piscatorial art.

An advertiser in the angling columns of the *Bazaar, Exchange and Mart* recently offered his kit for sale, consisting of salmon, trout and combination rods, tuna rods, reels, etc. One reel cost 15 guineas (1914) and carries 2,700 feet of line. This outfit cost £150. Contrast the size of reel that would carry 2,700 feet of line with the fine and short blow lines and light reel of the bottom fisher, and the tremendous variety offered may be more easily realised. Sportsmen



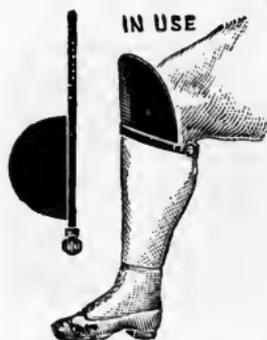
GROUND SEAT.

sometimes carry a number of rods; in fact, an angler visitor known to the writer was said to take sixty rods with him. He evidently collected them as some well-known golfers collect clubs.

Among sundries there are a number of articles designed for the health and convenience of anglers, and perhaps those that guard against exposure to damp and its resultant ills are the most useful. A ground seat that folds into four sections to go into the pocket is invaluable, and a pocket folding camp stool is very useful when out fishing for the day. Those subject to rheumatism will find a leather knee-cap or pad ample protection against the damp ground when kneeling to adjust tackle or keeping out of sight

behind bushes. To the bottom fisher a good rod rest will enable two or more rods to be fished, or the rod can be left with the float on the water while lunch is taken. There are several patterns, but the most approved is one that can be adjusted at varying angles.

It is now possible for the one-arm fisher to secure a rod holder that will hold the rod securely in position and leave the one arm free to manipulate the reel and line. Or this appliance serves for any angler,



KNEE PROTECTOR.

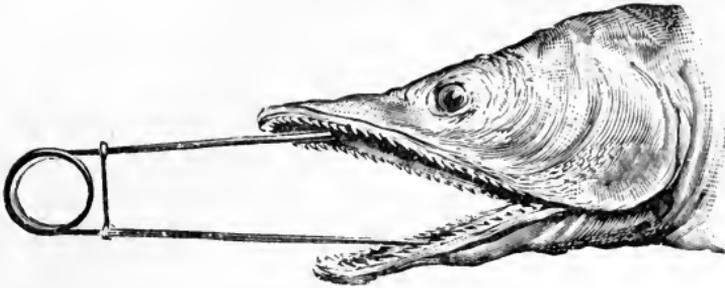
as it will leave both hands free to thread a fly or to unravel an entanglement.

Disgorging the fish often proves a difficult task if a suitable disgorger is not to hand, though to a tender-mouthed fish the familiar V-shaped slot in a piece of bone or metal will be sufficient. In the case of pike a gag will save a bitten finger, and under-sized fish can be returned alive to the water. The gag illustrated will hold the mouth open while the hooks are extracted.

Anglers' knives can be purchased with disgorger and scissors in addition to the usual blades.

For the big fish, and particularly pike, a "Priest"

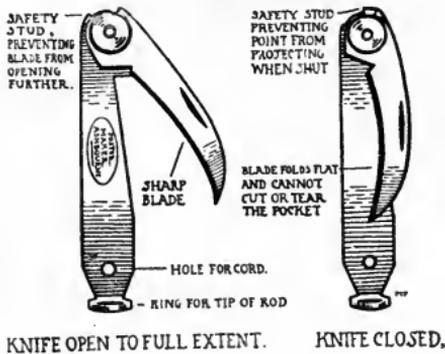
is sometimes a necessity. This consists of a stick loaded with lead in the form of a knob at the end, which will effectively render the fish senseless. The



PIKE GAG.

stick is often shaped in the form of a disgorger at the thin end and so serves two purposes.

Perhaps of all sundries an efficient tackle liberator is the greatest boon. The "Anglers' Friend Liberator" illustrated consists of a hinged blade which when opened forms a hook and to which is attached



" ANGLER'S FRIEND " TACKLE LIBERATOR.

20 feet of cord. The metal hook is attached to the rod top through the slot provided and loose branches and leaves can be lopped off, and tackle retrieved which otherwise would have been lost.

A brass clearing ring was the older form. A hinged brass ring with cord attached was slipped down the rod and line as near the entanglement as possible, and usually the major part of the tackle could be saved.

“Sport is the glow of perfect health,” says Emerson, “but the acumen of the naturalist, the skill of the sportsman, and the genius of the craftsman all go to the making of the angler.” Few lack the fishing instinct; perhaps it is a heritage from prehistoric man, which usually breaks out like the measles in boyhood days. It is a sport and a health-giving recreation to which there is no age limit—a communion with nature, full of nameless joys.

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